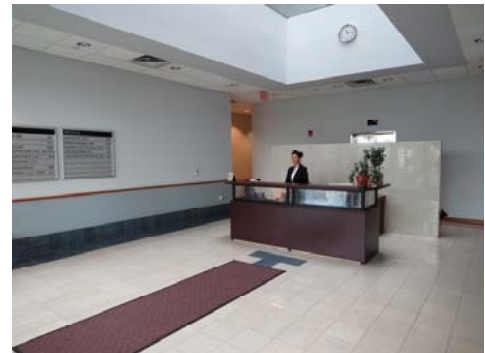# Talent Technology Center
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Chinese Institute of Engineers – USA
Greater New York Chapter
(CIE-USA/GNYC)
http://www.cieusa-gnyc.org

2023 Annual Convention

Convention: Friday, September 22, 2023
Technical sessions: Saturday, September 23, 2023

Hyatt Regency Hotel
Jersey City, New Jersey

Table of Contents

President's Message

On behalf of the Chinese Institute of Engineers USA, Greater New York Chapter (CIE-USA/GNYC), I welcome you to the GNYC 2023 annual convention. It is a major event of the institute in providing a forum to promote cooperation and experience sharing among fellow scientists and engineers in academia and industry. At the same time, we take the opportunity to celebrate and honor individuals and institutions who have made significant contributions to the field of science and engineering. Previous awardees include Nobel laureates, university presidents and professors, CEOs and technical leaders of Fortune 500 companies.

This year, the theme of the convention is ***Reimagine the Future — Computation, Connectivity, and Information***. Specifically, there are 6 technical sessions: Artificial Intelligence; Metaverse; Vehicular Technology: Autonomous Driving Communications and Control; Quantum Computing; Business & Management, and Cloud Computing. Subject Matter Experts (SMEs) of these technical areas are invited to share their research accomplishments and views.

We are honored to recognize the following accomplishments: **Prof. Sun-Yuan Kung** of Princeton University receives the Distinguished Achievement Award for contributions to Deep Machine Learning and AI Algorithms; GNYC 2022 President **Dr. Jeng-Bang Yao** receives the Institute Service Award; and seven high school students receive scholarship for outstanding performance in early years.

To GNYC, this is a year of challenge as we are hosting two events together: the 2023 GNYC Annual Convention and the CIEUSA National Council's AAEOY (Asian American Engineer of the Year). For the Program and Awardees, please see the AAEOY web page and the Journal.

My special thanks go to our Executive Committee and volunteers who worked diligently from the preparation to execution of all the events today, and to our financial sponsors.

Welcome to the 2023 CIEUSA-GNYC Annual Convention in Jersey City, New Jersey!

Sincerely,

Chi-Ming Chen

Chi-Ming Chen, Ph.D.
President

Chinese Institute of Engineers USA, Greater New York Chapter
2023 CIE-GNYC Convention Planning Committee

President	Chi-Ming Chen		
Convention Chair	Ming-Hung Chen		
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Treasurer	Howard Chen		
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	Keith Kwong Hon Wong	Monsong Chen	Rong Chang
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CIE-USA/GNYC 2023 Annual Convention Program
Hyatt Regency Hotel, Jersey City, NJ 07302

Theme: *Re-imagine the Future*
– Computation, Connectivity, and Information
重新想像未來 - 計算、連結、信息

Saturday, September 23, 2023

1:00 PM - 2:30 PM　　**Parallel Sessions**

Session I – Artificial Intelligence (AI)
(Palisades I)

Chair – **Dr. Ming-Hung Chen (陳銘宏)-** *Staff Research Scientist, IBM Research*

Dr. Zhou Yu (俞舟) - *Associate Professor of Computer Science, Columbia University*
"Introduction to Generative AI and its Dialog Applications"

Dr. Wei Zhang (张围)- *Senior Research Scientist, IBM Research*
"Decentralized Distributed Deep Learning"

Dr. Pin-Yu Chen (陳品諭)- *Principal Research Scientist, IBM Research AI*
"An Eye for AI: Towards Scientific Approaches for Evaluating and Improving Robustness and Safety of Foundation Models"

Session II – Metaverse
(Palisades II)

Chair – **Dr. Chonggang Wang** - *Principal Engineer, InterDigital, Inc.*

Dr. Max (Chong) Li - *CEO, OORT and Adjunct Professor, Columbia University*
"Introduction to Generative AI and its Dialog Applications"

Dr. Guiling (Grace) Wang - *Distinguished Professor and Associate Dean for Research & Director of AI Center for Research, New Jersey Institute of Technology (NJIT)*
"Building Trust and Intelligence: The AI-Blockchain Blueprint for the Metaverse"

Dr. Shucheng Yu - *Associate Professor, Electrical & Computer Engineering department, Director, Analytics and Information Security Laboratory (AISecLab), Steven Institute of Technology*
"Toward Autonomous and Intelligent Privacy and Data Security in Metaverse"

1:00PM – 2:30PM

Session III – Vehicular Technology
(Palisades III)

Chair – **Dr. Rose Hu (胡清阳)** - *IEEE Fellow, Associate Dean & Professor of College of Engineering/Electrical and Computer Engineering, Utah State University.*

Co-chair – **Greg Benn** - *Senior Director, Safety & Airworthiness Functional Chief Engineer, **The Boeing Company**.*

Dr. Xidong Xu (徐锡东) - *Technical Fellow, Enterprise Safety, Chief Aerospace Safety Office, ET&T, The Boeing Company*
"An Emerging Total System Approach to Improving Global Aerospace Safety"

Dr. Yi Qian (钱毅) - *IEEE Fellow, Professor, Department of Electrical and Computer Engineering, University of Nebraska-Lincoln*
"Machine Learning and Misbehavior Detections for Vehicular Communication Networks"

Dr. Haijian Sun (孙海建) - *Assistant Professor, School of Electrical and Computer Engineering, The University of Georgia*
"Driving the Future: Wireless Communication Solutions for Electrified Transportation"

1:00PM – 2:30PM

Poster session
Palisades / Liberty Pre-Function

2:30 PM - 3:30 PM

Networking mixer
Palisades I, II, III

3:30 PM - 5:00 PM

Parallel Sessions
Session IV – Quantum Computing
(Palisades I)

Chair – **Dr. Jen-Hao Yeh (葉人豪)** - *Research Scientist, IBM Quantum*

Dr. Wen-Sen Lu (呂文森) - *Staff Research Scientist, IBM Quantum*
"Opportunities and Challenges in Scaling up Superconducting Quantum Processors"

Dr. Javad Shabani - *Director of Center for Quantum Information Physics and Associate Professor of Physics, New York University*
"Towards realization of protected qubits using topological superconductivity"

3:30PM – 5:00PM

Session V – Business and Management
(Palisades II)

Chair – **Dr. Tung-lung Steven Chang (張東隆)-** *Professor of Marketing and International Business, Long Island University-Post (LIU-Post) College of Management*

Dr. Weichun Zhu (朱伟春)- *Associate Professor of Management, Kean University*
"Ethical Leadership with Both "Moral Person" and "Moral Manager" Aspects: Scale Development and Cross-Cultural Validation"

Dr. Wei Yang (杨威) - *Associate Professor, Long Island University at Post*
"Learning Unknown Private Valuation in Generalized Second Price Position Auction"

Dr. Mike Chao (Chenho Chao) - *Director of the Russ Berrie Institute for Professional Sales and Professor of Marketing, Cotsakos College of Business, William Paterson University of New Jersey*
"The Effect of Dialectical Thinking on the Integration of Contradictory Information"

3:30PM – 5:00PM

Session VI – Cloud Computing
(Palisades III)

Chair – **Dr. I-hsin Chung -** *Senior Research Scientist, IBM Research*

Prof. Che-Rung Lee (李哲榮)- *Associate Professor of Computer Science, National Tsing Hua University*
"Virtualization Based Fault Tolerance"

Dr. Seetharami Seelam - *Principal Research Scientist and Technical Lead, IBM Research*
"System co-design for flexible training of foundation models in the cloud"

Susan Diamond - *Senior Engineering Manager at Twilio*
(TBD)

Executive Team

President

Dr. Chi-Ming Chen (陳啟明)
AT&T Labs (retired)
Howell, New Jersey
(chimingchen_ieee@yahoo.com)

Biography:

Dr. Chi-Ming Chen retired from AT&T Labs in 2018 after 33 years of working in the telecommunications industry, including 10 years with Bell Communications Research (Bellcore). In addition, he was a faculty member at Tsing Hua University from 1975 to 1979.

Chi-Ming received his Ph.D. in Computer and Information Science from the University of Pennsylvania; M.S. in Computer Science from the Pennsylvania State University; M.S. and B.S. in Physics from Tsing Hua University, Taiwan.

Chi-Ming Chen is a Life Senior Member of IEEE and Senior Member of the ACM. He is an Advisory Board Member of IEEE Communications Society (ComSoc) Communications Quality & Reliability Technical Committee (CQRTC). He was a voting member of the IEEE GLOBECOM & ICC Management & Strategy (GIMS) Standing Committee and served as the GLOBECOM and ICC Site Selection Chair from 2012 to 2017. These are the two flagship conferences of ComSoc. He also served as the Executive Chair of ICC 2019, Shanghai, China. Currently, he is serving as the Keynote Co-Chair of ICC 2024, Denver; Operations Co-Chair of GLOBECOM 2024 in Cape Town, South Africa; and the Executive Chair of GLOBECOM 2026 to be held in Macau, China in 2026.

While retired, Dr. Chen continues to be an active IEEE volunteer. He has been co-chairing the Roadmap Working Group of IEEE Future Networks Initiative (was named as 5G Initiative initially) since 2016. The Working Group publishes annually the International Network Generations Roadmap (INGR) which identifies the drivers, needs, challenges, enablers, and potential solutions of various wireless related technologies over three-, five-, and ten-year time spans. Since 2014, he organizes the IEEE Emerging Technology Reliability Roundtable (ETR-RT). It is a brain storming event of 10-12 subject matter experts to identify the reliability challenges of emerging technologies and propose potential solutions.

More information can be found on

- https://futurenetworks.ieee.org/roadmap
- https://cqr.committees.comsoc.org/etr-rt-2023/
- https://icc2024.ieee-icc.org/committees/industry-forums-exhibition-ife-committee

Treasurer:

Dr. Howard Chen (陳浩)

Treasurer, Chinese Institute of Engineers, Greater New York Chapter
VP of Communications, OCA Westchester and Hudson Valley Chapter
hchen@oca-whv.org

Howard Chen received his Ph.D. degree in electrical engineering and computer sciences from the University of California, Berkeley in 1987. From 1987 to 2013, Dr. Chen worked at the IBM Research Division, Thomas J. Watson Research Center, in Yorktown Heights, New York, where he had been involved in the design and implementation of many IBM eServer products.

As a prolific inventor holding 37 U.S. patents, Dr. Chen has received numerous IBM Invention Achievement Awards. He has also received the IBM Outstanding Contribution Award and the Outstanding Technical Achievement Award at IBM's Corporate Technical Recognition Event, for his contribution to the development of leading-edge design methodologies and tools.

Dr. Chen served as the president of Chinese Institute of Engineers, Greater New York Chapter in 2013, and received the dynamic achiever award from OCA Westchester and Hudson Valley Chapter in 2015. He also organized the CIE-USA Centennial Conference in 2017. For his substantial contribution and commitment to the betterment of the community, Dr. Chen received a Commendation Award from the New York State Senate, which was presented by Senator Pete Harckham during the Asian American and Pacific Islander Heritage Month commemoration ceremony in July 2023.

Secretary:

Dr. Wei-Tsu Tseng (曾偉志)
Research Staff Member
IBM Research, Semiconductor Technology
257 Fuller Road,
Albany, NY 12203
wei-tsu.tseng1@ibm.com

Biography:

Dr. Wei-Tsu Tseng is a research staff member in IBM's semiconductor research center in Albany, NY, USA. He has accrued 18 years of experience in IBM and has been leading the R&D activities in chemical-mechanical planarization (CMP) including process integration, consumable evaluation, post CMP cleaning, and JDP projects with equipment and chemical suppliers. Prior to his current position at IBM, he was a senior technical staff at GlobalFoundries as a CMP team lead in Advanced Technology Development (ATD) department from 2015 to 2018. Before joining IBM's semiconductor research & development center in East Fishkill, NY in 2001, he was an assistant professor in National Chiao Tung University and then National Cheng Kung University in Taiwan.

Wei-Tsu has to his credits more than 50 patents and has published 100+ technical papers covering all different technical aspects of CMP, post-CMP cleaning, low-k dielectrics, Cu plating and interconnects, and am often invited to give technical presentations worldwide at major integrated circuit (IC) device processing related international conferences. He serves in the committee for all major CMP conferences (ICPT, CAMP-CMP) and guest editors of special issues for ECS journals and Nanomaterials.

Wei-Tsu obtained his Ph.D. from the University of Texas at Austin in Physics. B.S. degree in Metallurgy and Material Science was from in the National Cheng Kung University in Taiwan. He is a senior member of IEEE and ECS.
.

Program Chair:

Dr. Ming-Hung Chen（陳銘宏）
Staff Research Scientist
IBM Research
1101 Kitchawan Rd, Yorktown Heights, NY, 10598
minghung.chen@gmail.com

Biography:

Dr. Ming-Hung Chen received the B.S. and M.S. degrees in computer information science from National Chiao Tung University, Hsinchu, Taiwan, in 2004 and 2006, respectively. He then received his Ph.D. degree in computer science and information engineering from the National Taiwan University, Taipei, Taiwan in 2016. He began his journey at IBM Research in 2017. His works on the design of the IBM cloud network control plane and instance storage significantly improved the IBM Cloud. His recent works include building IBM's first cloud-native AI supercomputer and hardware-middleware system co-design for the next-generation AI clusters. His recent research interests include cloud architecture, composable system, AI system co-design, and low-latency communication protocol.

2023 CIE-USA/GNYC Award Citations

Distinguished Achievement Award

Prof. Dr. S.Y. Kung
For his Outstanding Contributions to Deep Machine Learning and AI Algorithms

Institute Service Award

Dr. Jeng-Bang Yau (姚正邦)
For his devoted service to this Institute

Distinguished Achievement Award (2023)

Dr. S. Y. Kung

Dr. S.Y. Kung, Life Fellow of IEEE, is a Professor of Electrical and Computer Engineering at the Princeton University. His research areas include VLSI array processors, AI algorithms, machine learning, deep learning networks, neural architectural search, and compressive privacy. He was a founding member of several Technical Committees of the IEEE Signal Processing Society. He was elected to Fellow of IEEE in 1988 and served as a Member of the Board of Governors of the IEEE Signal Processing Society (1989-1991). He was a recipient of IEEE Signal Processing Society's Technical Achievement Award for the contributions on "parallel processing and neural network algorithms for signal processing" (1992); a Distinguished Lecturer of IEEE Signal Processing Society (1994); a recipient of IEEE Signal Processing Society's Best Paper Award; and a recipient of the IEEE Third Millennium Medal (2000). Since 1990, he has been the Editor-In-Chief of the Journal of VLSI Signal Processing Systems. He has authored and co-authored more than 500 technical publications and numerous textbooks including ``VLSI Array Processors'', Prentice-Hall (1988); ``Digital Neural Networks'', Prentice-Hall (1993); ``Principal Component Neural Networks'', John-Wiley (1996); ``Biometric Authentication: A Machine Learning Approach'', Prentice-Hall (2004); and ``Kernel Methods and Machine Learning'', Cambridge University Press (2014).

Institute Service Award (2023)

Dr. Jeng-Bang Yau

Dr. Jeng-Bang Yau is a Research Scientist in IBM Quantum at the IBM T.J. Watson Research Center, with his current research focused on exploration and development of Experimental Quantum Computing Technology. Dr. Yau received his B.S. and M.S. degrees in Electrical Engineering from National Tsing Hua University (NTHU) in Hsinchu, Taiwan and his Ph.D. degree in Electrical Engineering from Princeton University in 2002. The research topic of his Ph.D thesis has been featured in the Research Highlights of Nature Physics and interviewed by the Science magazine. Prior to joining IBM Research in 2006, he was a postdoctoral associate in the Dept. of Applied Physics at Yale University with his research focused on complex oxide electronics.

Dr. Yau has received various corporate honors including IBM Inventor Plateau Award, Manager Choice Award, Eminence and Excellence Award, and Outstanding Technical Achievement Award. At IBM Research, Dr. Yau has also worked on novel semiconductor technologies, cryogenic non-volatile memories, and radiation dosimeters, etc. He currently holds over 120 patents and published 50+ peer-reviewed technical papers. He is a regular referee of technical and scientific journals such as IEEE journals, Applied Physics Letters, Journal of Applied Physics, and Physical Reviews.

Dr. Yau joined the Board of Director of CIE-GNYC in 2019 and was the Convention Chair of the 2021 Virtual Convention. He is also a motivational science coach certified by the International Coaching Federation and active in promoting STEM/STEAM education and talent cultivation. His efforts, to name a few, include providing academic mentoring and coaching through intelligent motivational scientific analyses, collaborating with the Houston Association of Space Science Education (HASSE), and hosting high school and college students for THINK Lab tours at IBM Research. Dr. Yau is an elected member of the Overseas Alumni Committee of NTHU. He also serves in the Alumni Students Council and annually interview regional applicants for the Undergraduate Admission Office of Princeton University.

**Chinese Institute of Engineers, USA/GNYC
2023 Annual Convention**

Hyatt Regency Hotel, Jersey City, New Jersey
Saturday, September 23, 2023

Technical Symposium
(1:00 pm - 2:30 pm – Palisades I, II, III)

Session I

Artificial Intelligence (AI)
(1:00 pm - 2:30 pm – Palisades I)

Session Chair

Dr. Ming-Hung Chen (陳銘宏)　　Staff Research Scientist, IBM Research

Session Speakers

Dr. Pin-Yu Chen (陳品諭)　　Principal Research Scientist, IBM Research AI

Dr. Zhou Yu (俞舟)　　Associate Professor of Computer Science, Columbia University

Dr. Wei Zhang (张围)　　Senior Research Scientist, IBM Research

Session: Artificial Intelligence

Session Chair:

Dr. Ming-Hung Chen (陳銘宏)
Staff Research Scientist
IBM Research
1101 Kitchawan Rd, Yorktown Heights, NY, 10598
minghung.chen@gmail.com

Biography:

Dr. Ming-Hung Chen received the B.S. and M.S. degrees in computer information science from National Chiao Tung University, Hsinchu, Taiwan, in 2004 and 2006, respectively. He then received his Ph.D. degree in computer science and information engineering from the National Taiwan University, Taipei, Taiwan in 2016. He began his journey at IBM Research in 2017. His works on the design of the IBM cloud network control plane and instance storage significantly improved the IBM Cloud. His recent works include building IBM's first cloud-native AI supercomputer and hardware-middleware system co-design for the next-generation AI clusters. His recent research interests include cloud architecture, composable system, AI system co-design, and low-latency communication protocol.

Session Introduction/Abstract:

In a world characterized by rapid technological advancements, AI stands as one of the most transformative forces, reshaping industries, societies, and the very way we perceive and interact with our environment. This session aims to provide the audiences with a holistic perspective on the diverse and transformative capabilities of artificial intelligence. It is an opportunity to engage with cutting-edge concepts, engage in thought-provoking discussions, and decipher the multifaceted dimensions of AI's impact on our present and future.

Introduction to Generative AI and its Dialog Applications

Session Speaker:

Dr. Zhou Yu (俞舟)
Associate Professor
Computer Science Department, Columbia University
Schapiro CEPSR 723, 530 West 120th Street, New York, NY 10027
zy2461@columbia.edu

Biography:

Zhou Yu is an Associate Professor at Columbia University Computer Science Department. She obtained her Ph.D. from Carnegie Mellon University in 2017. She received her bachelor's degree in Computer Science and English Language from Zhejiang University. Dr. Yu has built various dialog systems with significant practical impacts, such as a job interview training system, a depression screening system, an Alexa social chatbot, and a second language learning system. Her research interest includes dialog systems, language understanding and generation, vision and language, human-computer interaction, and social robots. Dr. Yu's work earned a 2019 ACL best paper award nomination. She was recognized in the Forbes 2018 30 under 30 in Science and won the 2018 Amazon Alexa Prize. Zhou also is the CEO of Articulate.ai Inc, a startup that provides online second-language communication training using AI.

Abstract:

This talk first explains the internal mechanism of large language models, such as GPT-3 and ChatGPT. Then, we will discuss some strengths and shortcomings of current large language models. Finally, we will demonstrate potential applications that leverage large language models in various fields, such as marketing and sales.

Distributed Decentralized Deep Learning

Session Speaker:

Dr. Wei Zhang (张围)
Senior Research Scientist
IBM T.J.Watson Research Center
1101 Kitchawan Rd, Yorktown Heights, NY, 10598
weiz@us.ibm.com

Biography:

Dr. Wei Zhang is a senior research scientist at IBM T.J.Watson Research Center, where he joined in 2013. He obtained his Ph.D. degree in Computer Sciences Department from University of Wisconsin, Madison in 2013. His research interests include computer systems, programing languages and software engineering, large scale machine learning system design and implementation, and AI applications such as AI for Code. Dr. Zhang most recently works in the hybrid cloud department at IBM research, with a focus of applying Large Language Modeling techniques to software modernization (e.g., COBOL to Java translation). Dr. Zhang has published extensively in AI conference and journals such as AAAI, ICML, ICLR IJCAI, NeurIPS , Nature Machine Intelligence and TPAMI and also computer system conferences and journals such as ASPLOS, OSDI, PLDI and TOSEM. Dr. Zhang holds 15 US patents in AI system design and several best paper awards.

Abstract:

Distributed deep learning is the de facto approach to training neural networks at scale. Traditional training approaches include Allreduce-based Synchronous Stochastic Gradient Descent (SSGD) and Parameter-server based Asynchronous Stochastic Gradient Descent (ASGD). The former approach suffers from the straggler problem and the latter approach is known to have unstable convergence behavior. In this talk, I will summarize the work that we have done in the past 5 years that take advantage of the recent breakthrough in theoretical non-convex optimization (i.e. Decentralized Parallel Stochastic Gradient Descent (DPSGD)) and demonstrate how its syn-chronous/asynchronous implementation is a simple yet powerful mechanism, for distributed deep learning training, that is friendly to heterogeneous system, low-bandwidth/high-latency hardware and provide excellent convergence guarantee. This line of research results in several best paper awards in prestigious AI conferences and enabled IBM to achieve the world record in accelerating Automatic Speech Recognition system training.

An Eye for AI: Towards Scientific Approaches for Evaluating and Improving Robustness and Safety of Foundation Models
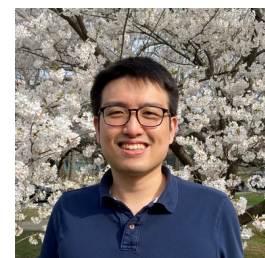
Session Speaker:

Dr. Pin-Yu Chen (陳品諭)
Principal Research Scientist
IBM Research AI
pinyuchen.tw@gmail.com

Biography:

Dr. Pin-Yu Chen is a principal research scientist at IBM Thomas J. Watson Research Center, Yorktown Heights, NY, USA. He is also the chief scientist of RPI-IBM AI Research Collaboration and PI of ongoing MIT-IBM Watson AI Lab projects. Dr. Chen received his Ph.D. in electrical engineering and computer science from the University of Michigan, Ann Arbor, USA, in 2016. Dr. Chen's recent research focuses on adversarial machine learning of neural networks for robustness and safety. His long-term research vision is to build trustworthy machine learning systems. He received the IJCAI Computers and Thoughts Award in 2023. He is a co-author of the book "Adversarial Robustness for Machine Learning". At IBM Research, he received several research accomplishment awards, including IBM Master Inventor, IBM Corporate Technical Award, and IBM Pat Goldberg Memorial Best Paper. His research contributes to IBM open-source libraries including Adversarial Robustness Toolbox (ART 360) and AI Explainability 360 (AIX 360). He has published more than 50 papers related to trustworthy machine learning at major AI and machine learning conferences, given tutorials at NeurIPS'22, AAAI('22,'23), IJCAI'21, CVPR('20,'21,'23), ECCV'20, ICASSP('20,'22,'23), KDD'19, and Big Data'18, and organized several workshops for adversarial machine learning. He is currently on the editorial board of Transactions on Machine Learning Research and serves as an Area Chair or Senior Program Committee member for NeurIPS, ICML, AAAI, IJCAI, and PAKDD. He received the IEEE GLOBECOM 2010 GOLD Best Paper Award and UAI 2022 Best Paper Runner-Up Award.

Abstract:

Foundation models, which use deep learning pre-trained on large-scale unlabeled data and then fine-tuned with task-specific supervision, have become a prominent technique in AI technology. While foundation models have great potential to learn general representations and exhibit efficient generalization across domains and data modalities, they can pose unprecedented challenges and significant risks to robustness and safety. This talk outlines recent challenges and advances in the robustness and safety of foundation models. It also introduces the "AI model inspector" framework for comprehensive risk assessment and mitigation, and provides use cases in generative AI and large language models.
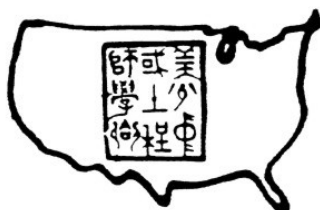
Chinese Institute of Engineers, USA/GNYC
2023 Annual Convention

Hyatt Regency Hotel, Jersey City, New Jersey
Saturday, September 23, 2023

Technical Symposium
(1:00 pm - 2:30 pm – Palisades I, II, III)

Session II

Metaverse
(1:00 pm - 2:30 pm – Palisades II)

Session Chair

Dr. Chonggang Wang	Principal Engineer, InterDigital, Inc.

Session Speakers

|	
Dr. Max (Chong) Li	CEO, OORT and Adjunct Professor, Columbia University
Dr. Guiling (Grace) Wang	Distinguished Professor and Associate Dean for Research & Director of AI Center for Research, New Jersey Institute of Technology (NJIT)
Dr. Shucheng Yu	Associate Professor, Electrical & Computer Engineering department, Director, Analytics and Information Security Laboratory (AISecLab), Steven Institute of Technology

Session: Metaverse

Session Chair:
Dr. Chonggang Wang
Principal Engineer
InterDigital, Inc.
1001 E Hector St #300, Conshohocken, PA 19428, USA
Conggang.Wang@Interdigital.Com
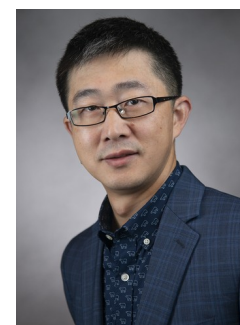
Biography:

Dr. Chonggang Wang is currently a Principal Engineer with InterDigital, Inc., USA. He has more than twenty years of experience in the fields of wireless communications, networking and computing, including research, development, and standardization. His recent research interests include 5G evolution and 6G, distributed communications and computing services, blockchain and distributed ledger technologies, blockchain-enabled future wireless, and trustworthy ICT. He is Vice Chair of ETSI Industry Specification Group (ISG) on Permissioned Distributed Ledgers (PDL). He is the Founding Editor-in-Chief of the IEEE Internet of Things Journal and is currently the Editor-in-Chief of the IEEE Network Magazine. He is a Fellow of the IEEE.

Session Introduction/Abstract:
Metaverse is emerging as a new paradigm to seamlessly integrate physical world, digital world, and virtual world. Metaverse has great potential to evolve and revolutionize various vertical domains, for instance, to enable industrial metaverse, healthcare metaverse, vehicle metaverse, etc. However, the success of metaverse relies on multitude technologies such as next-gen communications and networking, cloud and edge computing, artificial intelligence (AI) especially generative AI and AI-generated content, blockchain and distributed ledger technologies, and digital twins. This session aims to discuss challenges and opportunities of this exciting metaverse era. As a case study, how next-gen decentralized cloud could drive metaverse will be examined. Trust and AI for metaverse and data security in metaverse will be discussed as well.

Drive the Metaverse with Next-Gen Cloud Networks

Session Speaker:
Dr. Max (Chong) Li
CEO, OORT, USA
Adjunct Professor, Columbia University, USA
cl3607@columbia.edu

Biography:

Dr. Max (Chong) Li is a faculty member in the department of electrical engineering at Columbia University (in the City of New York), the founder & CEO of the Web3 data cloud company "Oort". He had been working with Qualcomm Research on 4G LTE and 5G systems design. He is an IEEE Senior member, and also the president of Science & Technology Economic Committee at China-US Chamber of Commerce. Dr. Li is a holder of 200+ International/US patents. He has been actively publishing academic papers on top-ranking journals, including Proceedings of the IEEE, IEEE Transactions on Information Theory, IEEE Communications Magazine, Automatica, etc. His paper "Youla Coding and Computation of Gaussian Feedback Capacity" was nominated for the 2019 IEEE Information Theory Society Paper Award (one of the highest honors from the IEEE Information Theory Society). He has also served as reviewer, committee and co-chair for most prestigious journals and conferences in communications and control societies. Dr. Li is a grant review committee member of Natural Sciences and Engineering Research Council of Canada. He is the author of the book "Reinforcement Learning for Cyber-physical Systems" (Taylor & Francis CRC press). Dr. Li has broad research interests including information theory, machine learning, distributed database and computing systems (e.g., blockchain), networked control and communication, PYH/MAC systems design for advance telecommunication technologies (5G and beyond).

Abstract:
In the rapidly growing world of the Metaverse, there is an increasing demand for affordable computing power, positioning it as a cornerstone of our future society. In addition, concerns about data privacy and regulatory standards are becoming more prominent. Ensuring data privacy, both during its processing and storage, is of utmost importance. This presentation introduces the decentralized cloud as a potential solution to meet the rising demand for computing power while addressing privacy concerns. We will discuss why the decentralized cloud is the answer, how it can tackle these challenges, and the obstacles we may face along the way.

Building Trust and Intelligence: The AI-Blockchain Blueprint for the Metaverse
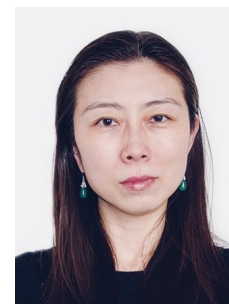
Session Speaker:

Dr. Guiling (Grace) Wang
Distinguished Professor and Associate Dean for Research
Ying Wu College of Computing
Director, AI Center for Research
New Jersey Institute of Technology (NJIT)
gwang@njit.edu

Biography:

Dr. Guiling (Grace) Wang is a Distinguished Professor and the Associate Dean for Research at the Ying Wu College of Computing, New Jersey Institute of Technology (NJIT). She holds a primary appointment in the Computer Science Department and also has joint appointments at the MT School of Management as a Chartered Financial Analyst (CFA) and at the Department of Data Science. Dr. Wang is the Founding Director of NJIT's AI Center for Research.
Dr. Wang earned a B.S. in Software from Nankai University and completed her Ph.D. in Computer Science and Engineering with a minor in Statistics at The Pennsylvania State University in 2006. In the same year, she joined NJIT. Dr. Wang is NJIT's first female professor to be selected as an IEEE Fellow.

With research interests encompassing deep learning, blockchain technologies, intelligent transportation, and FinTech, Dr. Wang has made significant contributions to her field. Her work has been published in prestigious journals and conferences, such as AAAI, IJCAI, INFOCOM, and IEEE Transactions on Parallel and Distributed Systems. Notably, her project on the Decentralized Vehicle Credential Management System Based on Consortium Blockchain, funded by the FHWA EAR program, was one of the four awardees selected out of 122 nationwide proposals in 2020.

Abstract:

As the vision of the metaverse unfolds, the path is fraught with challenges, ranging from scalability and security to fostering genuine user engagement. Within this complex landscape, two technological pillars emerge as vital: Artificial Intelligence (AI) and blockchain. AI injects the metaverse with intelligence, offering dynamic content generation and personalization, while blockchain fortifies it with trust, guaranteeing secure and transparent interactions. Together, they lay out a blueprint for a metaverse where innovation thrives within a framework of reliability. Delve into the synergy between AI and blockchain, revealing their combined potential to mold a metaverse anchored in trust and enriched with intelligence.

Toward Autonomous and Intelligent Privacy and Data Security in Metaverse

Session Speaker:

Dr. Shucheng Yu
Associate Professor
Electrical and Computer Engineering Department
Director, Analytics and Information Security Laboratory (AISecLab)
Stevens Institute of Technology
shucheng.yu@stevens.edu

Biography:

Dr. Shucheng Yu is an Associate Professor of Electrical and Computer Engineering at Stevens Institute of Technology, where he directs the Analytics and Information Security for Complex Systems Lab (AISecLab). He received his PhD in Electrical and Computer Engineering from Worcester Polytechnic Institute in 2010. His research interest is on cybersecurity in general, with recent focuses on information security, applied cryptography, wireless networking and sensing, distributed trust, and applied machine learning, and practical security and privacy in IoT systems. He has published over eighty research articles in academic journals and conference proceedings. He has been the editor or guest editor for several high-impact international journals, including IEEE Transactions on Mobile Computing, IEEE Transactions on Vehicular Technology, and IEEE Internet of Things Journal. He served at the organizing committee for major international conferences including IEEE Infocom and IEEE Globecom. He is the recipient of the Test of Time Paper Award of IEEE Infocom 2020. He is a Fellow of IEEE and a Fellow of AAIA.

Abstract:

Metaverse promises virtual deep immerse experiences in many fields of our life. Driven by massive private data collection, Metaverse also brings about unprecedented challenges on privacy and data security. What complicates the problem is the large-scale integration of distributed and heterogeneous end devices, networks, and sub-systems as well as the dynamics in the ecosystem of Metavere. The diverse population of users of different technical skills and cognitive levels makes it more challenging to protect privacy and data security in Metaverse. To address the problem, it is impractical to rely on pre-configured security and privacy mechanisms as in existing systems, nor shall it require too much human intervention. In the end, an AI-based intelligent and autonomous diagram, based on available security and cryptography primitives, is needed for privacy and data security protection. This talk will outline such diagram and discuss challenges and opportunities.

Chinese Institute of Engineers, USA/GNYC
2023 Annual Convention

Hyatt Regency Hotel, Jersey City, New Jersey
Saturday, September 23, 2023

Technical Symposium
(1:00 pm - 2:30 pm – Palisades I, II, III)

Session III

Vehicular Technology
(1:00 pm - 2:30 pm – Palisades III)

Session Chairs

Dr. Rose Hu (胡清阳)	IEEE Fellow, Associate Dean & Professor of College of Engineering/Electrical and Computer Engineering, Utah State University
Greg Benn	Senior Director, Safety & Airworthiness Functional Chief Engineer, The Boeing Company

Session Speakers

Dr. Xidong Xu (徐锡东)	Technical Fellow, Enterprise Safety, Chief Aerospace Safety Office, ET&T, The Boeing Company
Dr. Yi Qian (钱毅)	IEEE Fellow, Professor, Department of Electrical and Computer Engineering, University of Nebraska-Lincoln
Dr. Haijian Sun (孙海建)	Assistant Professor, School of Electrical and Computer Engineering, The University of Georgia

Session: Navigating the Future of Vehicular Technologies: Challenges, Innovations, and Pathways to a Dynamic Future

Session Chair:

Dr. Rose Qingyang Hu (胡清阳)
IEEE fellow, Professor and Associate Dean for Research
College of Engineering, Utah State University
4100 Old Main Hill
Logan, UT 84322-4100
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Biography:

Rose Qingyang Hu is a Professor of Electrical and Computer Engineering Department and Associate Dean for Research of College of Engineering at Utah State University. Besides more than 12 years' academia research experience, Prof. Rose Hu has more than a decade R&D experience with Nortel, Blackberry and Intel as technical manager, senior research scientist, and senior wireless system architect, working on industrial 3G and 4G technology development, 3GPP/IEEE standardization. Her current research interests include next-generation wireless communications, wireless network design and optimization, Internet of Things and Cyber Physical System, AI/ML in wireless networks. She has published over 300 papers in leading IEEE journals and conferences and holds over 30 patents in her research areas.

Prof. Rose Hu is a Fellow of IEEE, NIST Communication Technology Laboratory Innovator 2020, IEEE Communications Society Distinguished Lecturer 2015-2018, IEEE Vehicular Technology Society Distinguished Lecturer 2020 – 2022. She is serving as a Board of Governor of IEEE ComSoc and also Board of Director of American Society of Engineering Education Engineering Research Council.

Session Introduction/Abstract:

Over the past century, substantial progress has been achieved in vehicular technologies. However, the multifaceted challenge of enhancing safety, security, and efficiency endures. This imperative has sparked the emergence of diverse technologies and infrastructures poised to collaborate harmoniously, addressing these challenges and cultivating an encompassing ecosystem. The session will elucidate total system complexity and structure and present the assessment of safety models, tools, methods, processes, and management practices under this context. Notably, the session will spotlight a case study detailing the integration of Boeing's safety initiatives into this framework.

Moreover, the discussion delves into solutions for optimized traffic management through vehicular communication networks, spotlighting security concerns and cutting-edge solutions. A demonstration will be showcased, highlighting the capabilities of machine learning in detecting anomalies within these networks. The narrative extends to the transitions to electrified vehicle-centric transportation, necessitating resilient communication networks for seamless real-time data exchange across electric vehicles, charging stations, and the grid. This transformative shift accentuates challenges and opportunities, emphasizing the imperatives of cohesive vehicular communication, interoperability, and cybersecurity in shaping a dynamic and promising future.

Session: Navigating the Future of Vehicular Technologies: Challenges, Innovations, and Pathways to a Dynamic Future

Session Co-chair:

Greg Benn
Senior Director
Safety & Airworthiness Functional Chief Engineer
The Boeing Company

Biography:

Greg Benn is the Boeing Functional Chief Engineer for Safety & Airworthiness Engineering. In this role, he is responsible for the development of capabilities and technical excellence for certification, product safety, investigative, and safety data analytics engineering. This includes development of technical strategy, enhanced capabilities such as model based certification and safety, knowledge curation, lessons learned/feedback loops, people development in the skill, and continuous improvement. Greg also leads the Enterprise Safety organization, specifically focused on the development of safety engineering capability, addressing enterprise wide product safety issues and the Boeing Global Services product safety team.

Prior to this role, Greg was the Director for Verification, Safety & Certification for the New Mid-Market Airplane leadership team, where he was responsible for developing the safety & certification team and approach for the airplane, production and continued airworthiness. He has also served as the KC-46 Deputy Chief Program Engineer, the 787 Airplane Performance Chief Engineer and the 767 Safety, Certification and Performance leader.

Greg began his career in 2001 in the Boeing Commercial Aircraft Product Development team as an aerodynamics engineer. This evolved to a series of roles on the 787 airplane development program including high and low speed aerodynamics, wind tunnel testing, systems design support and flight testing.

Greg has a Bachelor of Science in Aerospace Engineering from the University of Colorado and a Master of Science in Aeronautical and Astronautical Engineering from Massachusetts Institute of Technology.

An Emerging Total System Approach to Improving Global Aerospace Safety

Session Speaker:

Dr. Xidong Xu (徐锡东)
Boeing Technical Fellow
Enterprise Safety, Chief Aerospace Safety Office,
Engineering, Test & Technology (ET&T), The Boeing Company
Everett, WA
xidong.xu@boeing.com

Biography:

Dr. Xidong Xu is currently a Boeing Technical Fellow (TF) in the Enterprise Safety organization at Boeing, providing technical leadership for the development and applications of a socio-technical systems approach and system of systems approach to safety improvements, including a total system approach to improving global aerospace safety. Dr. Xu has held various positions at Boeing, including Boeing Associate Technical Fellow (ATF) and Boeing TF serving as a Technical Advisor to the Aerospace Safety Analytics Integrated Product Team, ATF in the Environment, Health and Safety organization, Systems Engineer and ATF in the Boeing Research & Technology (BR&T) Airspace & Operational Efficiency group, Human Factors Engineer in the Boeing Commercial Airplanes Aviation Safety group. Before joining Boeing in 2006, he worked as Research Associate at NASA Ames Research Center, Research Assistant and Teaching Assistant at the University of Illinois at Urbana-Champaign, where he obtained a Ph.D. in Human Factors, Research Assistant at Central Michigan University, Visiting Scholar at the Swiss Federal Institute of Technology in Zurich, and Instructor and Lecturer at the Civil Aviation University of China.

Abstract:

The last century or so has seen significant safety performance improvements across the global aerospace system, but performance sustainment and further improvements is challenging. To tackle this challenge, a total system approach to improving global aerospace safety has been emerging. In this presentation, I will first describe the total system (i.e., the global aerospace system) and the complexity involved in the total system. I will then provide a brief review of the existing safety models, methods, tools, processes, and management practices, followed by a recommendation to the global aerospace community. The final part of this presentation will be an overview of how Boeing's safety work is an integral part of the total system approach.

Security and Misbehavior Detections for Vehicular Communication Networks

Session Speaker:

Dr. Yi Qian (钱毅)
Professor, IEEE Fellow
Department of Electrical and Computer Engineering
University of Nebraska-Lincoln
yi.qian@unl.edu

Biography:

Yi Qian received a Ph.D. degree in electrical engineering from Clemson University. He is currently a professor in the Department of Electrical and Computer Engineering, University of Nebraska-Lincoln (UNL). Prior to joining UNL, he worked in the telecommunications industry, academia, and government. His research interests include communication networks and systems, and information and communication network security. Prof. Yi Qian is a Fellow of IEEE. He was previously Chair of the IEEE Technical Committee for Communications and Information Security. He was the Technical Program Chair for 2018 IEEE International Conference on Communications. He has been served on the Editorial Boards of several international journals and magazines, including as the Editor-in-Chief for IEEE Wireless Communications between July 2018 and June 2022. He was a Distinguished Lecturer for IEEE Vehicular Technology Society and a Distinguished Lecturer for IEEE Communications Society. He is the principal author of the textbook, "Security in Wireless Communication Networks", published by IEEE Press/Wiley in 2021.

Abstract:

Vehicular communication networks have been considered as a promising solution to achieve better traffic management and to improve the driving experience of drivers. However, vehicular networks are susceptible to various security attacks. Due to the wireless nature of vehicular communications, how to secure vehicular networks are great challenges that have hampered the implementation of vehicular network services. Many solutions have been proposed by researchers and industry in recent years. In this presentation, we first present an overview of security issues for vehicular networks, followed by a high-level survey on the state-of-the-art solutions on security for vehicular networks. After that, we present a case study on misbehavior detections in vehicular communication networks. We show that various machine learning schemes can be exploited in accurately identifying several misbehaviors in vehicular communication networks.

Driving the Future: Wireless Communication Solutions for Electrified Transportation

Session Speaker:

Dr. Haijian Sun (孙海建)
Assistant Professor
The University of Georgia
200 D. W. Brooks Dr, Athens, GA 30602
hsun@uga.edu

Biography:

Dr. Haijian Sun is an Assistant Professor in the School of Electrical and Computer Engineering at The University of Georgia, where he joined in 2022 as an Assistant Professor. He obtained her Ph.D. degree in the Department of Electrical and Computer Engineering from Utah State University, USA, in 2019. His current research interests include vehicular communication, wireless communication for 5G and beyond, machine learning at the edge, cyber security, IoT communications, wireless systems, and optimization analysis. Dr. Sun directs ESI Wireless Lab at The University of Georgia and has published extensively in the field of wireless communication. Dr. Sun is a Member of the IEEE.

His research has received a number of prestigious awards, including the 2022 University of Wisconsin Regent Scholar, National Science Foundation (NSF) CISE Research Initiation Initiative and Engineering Research Initiative award. He is the leading author of the book "5G and Beyond Wireless Communication Networks" and the leading author of IEEE Future Network Whitepaper on Massive MIMO.

Abstract:

The paradigm shift towards electrified transportation is poised to revolutionize the landscape of modern mobility. Such transformation encompasses far-reaching changes in policies, workforce dynamics, and technological advancements. Governments and industries worldwide are setting ambitious targets to phase out internal combustion engines, leading to unprecedented changes that promote the adoption of electric vehicles (EVs) and related infrastructure. As vehicles become electrified, the conventional refueling model gives way to a more dynamic charging approach. This shift expects the crucial need for efficient and robust communication networks to support real-time data exchange between EVs, charging stations, and the grid. The talk delves into the challenges and opportunities associated with building and optimizing such communication systems. Key considerations include seamless vehicular communication between EVs and infrastructures, ensuring interoperability between various vehicle types and charging stations, and addressing their cybersecurity concerns.
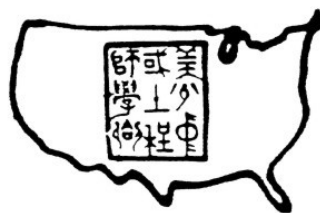
Chinese Institute of Engineers, USA/GNYC
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Saturday, September 23, 2023

Technical Symposium
(3:30 pm – 5:00 pm – Palisades I, II, III)

Session IV

Quantum Computing
(3:30 pm - 5:00 pm – Palisades I)

Session Chair

Dr. Jen-Hao Yeh (葉人豪)   Research Scientist, IBM Quantum

Session Speakers

Dr. Wen-Sen Lu (呂文森)   Staff Research Scientist, IBM Quantum

Dr. Javad Shabani   Director of Center for Quantum Information Physics and Associate Professor of Physics, New York University

Dr. Shu-Jen Han (漢述仁)   Vice President, R&D, SeeQC

Session: Quantum Computing

Session Chair:

Dr. Jen-Hao Yeh (葉人豪)
Research Scientist
IBM Quantum
White Plains, NY 10601
david.yehjenhao@gmail.com

Biography:

Jen-Hao Yeh is a Research Scientist at IBM Quantum. His work focuses on developing cryogenic hardware and thermal models for superconducting quantum computers, toward the goal of building a quantum computer with 100000 qubits. Previously he was a senior electrical engineer in Rigetti Computing, where he also led system buildout for superconducting quantum computers, in addition to component development. He was a postdoc researcher in the Laboratory for Physical Sciences, where he invented cryogenic attenuators for superconducting quantum devices, with a US patent. Jen-Hao received his Ph.D. degree in Electrical Engineering at the University of Maryland in 2013, and his B.S. degree in EE and Physics (double major) at National Taiwan University in 2006.

Session Introduction/Abstract:

Quantum computing promises a revolutionary way to build computers that can solve problems beyond classical supercomputers' capability. In this session, invited speakers from leading quantum computing companies and academic research groups will share the most recent development in the field. The topics start from the fabrication of a qubit, the building block of a quantum computer, to the challenges of scaling up quantum computers, and proposals to solve the scaling challenge, including a digital-based quantum computing system.

Opportunities and Challenges in Scaling up Superconducting Quantum Processors
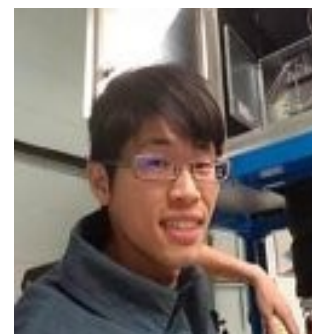
Session Speaker:

Dr. Wen-Sen Lu (呂文森)
Staff Research Scientist
IBM Quantum
1101 Kitchawan Rd, Yorktown Heights, NY, USA
Wen-Sen.Lu@ibm.com

Biography:

Dr. Wen-Sen (Vince) Lu graduated from Rutgers University with an aim on the realization of protective superconducting qubits, and he currently serves as a research scientist in IBM Quantum, Qautnum Design and Simulation. His research focuses on modular quantum circuits using advanced packaging such as 3DIC stacking and thru-silicon-vias technologies. Before he came to US to pursue his career in superconducting devices, he worked in tsmc Research and Development for two and a half years on implementing 3DIC technology into fingerprint sensors and held a US patent in invention of 3D stacked-chip package enabling foundry level wafer packaging. In addition to the research efforts, Wen-Sen devotes his spare energy into promoting quantum education to global audiences, among K-12 and traditional Chinese users. As an IBM Qiskit advocate, he leads and supervises the translation of Qiskit textbook into traditional Chinese for Qiskit community users. In the meantime, he also actively participates in quantum hackathons and quantum game jam to find exciting collaborations with quantum enthusiastic, where he served as mentor, coach, or judge for multiple virtual hackathons globally. Currently he is offering 6-week micro lecture series at his alma mater -- Taichung Municipal Taichung First Senior High School, aiming to introduce quantum information science to local Taiwanese students with only high school physical science background and limited English fluency. With the hardware research background and interests in quantum algorithm and education, Wen-Sen dedicates his skill and passion to learn and grow together with the next generation quantum workforce he met on the way of his quantum journey during this Noisy-Intermediate Scale Quantum device (NISQ) era.

Abstract:

Superconducting quantum processors offer promising pathway for meaningful quantum computations in the near future. To implement practical quantum algorithms that provides physical observables that could be run in a reasonable runtime, the researchers are currently pursuing the realization of modular devices to pave the way for scaling up quantum processors without compromising speed and quality. In this talk I will first introduce the challenges in scaling up superconducting quantum processors, along with the concept of device modularity that has been proposed to address these challenges. We will be reviewing several proposals to link processors together into a modular system capable of scaling without physics limitations, the applications and limitations in each proposal, and finally some technical remarks based on some current implementations among the community.

Towards realization of protected qubits using topological superconductivity

Session Speaker:

Dr. Javad Shabani
Director of Center for Quantum Information Physics
Associate Professor of Physics
New York University
726 Broadway, NYC, NY 10003
Jshabani@nyu.edu

Biography:

Bio: Javad Shabani is an Associate Professor of Physics and Director of Center for Quantum Information Physics at New York University. He received his Ph.D. from Princeton University and conducted post-doctoral research at Harvard University and University of California, Santa Barbara. His research interests are mainly on developing novel quantum hardware using materials innovation with recent research focus on topological superconductivity, developing voltage-controlled superconducting qubits and building a telecom test-bed for quantum communication in New York City. He is an active member of IEEE, American Physical Society, Materials Research Society and quantum education and workforce development in New York area. He is recipient of IBM Q Scholar, US Army and US Air Force young investigator awards.

Abstract:

A central goal in quantum computing research is to protect and control quantum information from noise. This talk will provide recent progress on the developing field of topological superconductivity where we can encode information in spatially separated Majorana zero modes (MZM). We show that topological superconductivity can be achieved in certain hybrid materials where the topological properties are not found in the constituent materials. These special MZMs are formed at the location of topological defects (e.g. boundaries, domain walls.) and manifest non-Abelian braiding statistics that can be used in noise-free unitary gate operations. We show by engineering a reconfigurable domain wall on a Josephson junction we can create a scalable platform to study MZM properties and their applications in quantum information science.

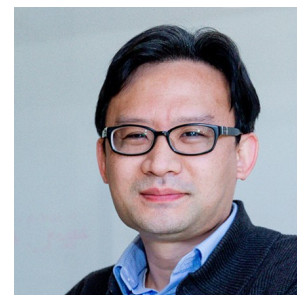# Scalable Energy-Efficient Quantum Computer

Session Speaker:

Dr. Shu-Jen Han (漢述仁)
Vice President, R&D
SeeQC
150 Clearbrook Rd., Elmsford, NY
sjhan@seeqc.com

Biography:

Dr. Shu-Jen Han is leading SeeQC's global (US, UK, Italy) research and development teams on developing the world first chip-based digital quantum computing system. Han has extensive experience in advancing complex chip technology from basic research to product qualification both as a senior director and later as an associate VP at HFC Semiconductor Corp. He led over 80 engineers and drove two generations of MRAM technology development (256Mb on 55nm and 1Gb on 22nm CMOS platforms). He started his career at IBM after receiving his Ph.D. from Stanford University, later he managed the nanoelectronics group at T. J. Watson Research Center working on world-leading beyond-silicon transistor research. His works have been widely reported in CNET, BBC, MIT Technology Review, New York Times, and Wall Street Journal etc. He has authored over 90 technical publications with over 14,000 citations (08/2023), including multiple publications in *Science* and *Nature* series, two book chapters, and over 200 issued US patents.

Abstract:

In the last decade, research and development of quantum computers (QCs) have rapidly advanced. Now hundreds of physical qubits are at our disposal, and one can find several remarkable experiments outperforming the classical computer in a specific computational task. However, for a practical QC to be realized, current demonstrated systems have to be significantly scaled up to include over 100,000 qubits with the ability to perform quantum error correction. Conventional brute-force scaling approach may soon run out of steam, as the number of control lines needs increase linearly with the number of qubits. This approach also introduces high latency as signals travel back and forth between quantum processors at cryogenic temperatures and control electronics at room temperatures. SeeQC aims to resolve these scaling and performance constraints by developing a digital-based quantum computing system – co-integration of a digital superconducting quantum management layer and the qubit layer at millikelvin temperatures.

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Technical Symposium
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Session V

Business and Management
(3:30 pm – 5:00 pm – Palisades II)

Session Chairs

Dr. Tung-lung Steven Chang (張東隆)	Professor of Marketing and International Business, Long Island University-Post (LIU-Post) College of Management

Session Speakers

Dr. Weichun Zhu (朱伟春)	Associate Professor of Management, Kean University
Dr. Wei Yang (杨威)	Associate Professor, Long Island University at Post
Dr. Mike Chao (Chenho Chao)	Director of the Russ Berrie Institute for Professional Sales and Professor of Marketing, Cotsakos College of Business, William Paterson University of New Jersey

Session: Business and Management

Session Chair:

Dr. Tung-lung Steven Chang (張東隆)
Professor of Marketing and International Business
Long Island University-Post (LIU-Post)
College of Management
720 Northern Blvd., Brookville, NY 11548
Steven.chang@liu.edu

Biography:

Dr. Tung-lung Steven Chang is a Professor of Marketing and International Business at LIU-Post. He has taught MBA programs at the headquarters of Northrop Grumman, Olympus, Motorola and Verizon as well as IMBA/EMBA in Switzerland, the US, Taiwan and China. He was a mentor at the Yale College Business Society and has conducted seminars at various locations, including Beijing, Shanghai, Taipei, London, Miami and the Headquarters of WTO in Geneva.

Dr. Chang is a Fulbright Scholar and the recipient of David Newton Award for Excellence in Teaching, United Nations Development Program Grant, Elite Grant (國研院伯樂計畫), Taiwan Fellowship Grant, Keller Grant and CIBEAR Faculty Scholarship Awards. His research focuses on global expansion strategies of multinational corporations and extends to the areas of Foreign Direct Investment (FDI) and international technology diffusion. Dr. Chang has published papers in the Journal of World Business, International Marketing Review, Decision Support Systems, Technological Forecasting and Social Change, International Journal of Advertising, and Journal of Strategic Marketing.

He served as a Research Advisor at the Chung-Hua Institution for Economic Research in Taipei and acted as an external reviewer for the Social Sciences and Humanities Research Council in Canada. He was a former president of the Chinese American Academic and Professional Society and a member of the New Jersey State Export Finance Company Advisory Council. Dr. Chang has served as a Trustee on the New Jersey City University Board. He received his Ph.D. in International Business and Marketing from the George Washington University and Ph.D. in Business Administration from National Chengchi University.

Session Introduction/Abstract:

This session comprises three valuable studies that explore different aspects of business and management, focusing on ethical leadership, the equilibrium of collective learning, and consumer's dialectical thinking. Let's delve into each presentation:

The first study emphasizes the significance of ethical leadership in mitigating unethical employee behaviors and corporate misconduct within organizations. Dr. Zhu examines a novel

measure of ethical leadership (ELM) from two theoretical perspectives: the "moral person" and the "moral manager," drawing parallels with Confucian teachings on leadership and management, namely "xiuji" and "anren." Notably, Dr. Zhu demonstrates that the ELM exhibits partial measurement invariance across both Chinese and American contexts.

The second presentation examines the equilibrium analysis of the generalized second price position (GSP) auction under incomplete information. Dr. Yang proposes an extensive cognitive framework and a mathematical model that illustrate how players form and update their beliefs through collective learning during the GSP auction. This learning process leads to the convergence of expected valuations, a finding supported by simulation experiments.

Lastly, the third study investigates the impact of consumers' dialectical thinking on their integration process of contradictory product information. Dr. Chao's research reveals those consumers low (vs. high) in dialectical thinking process contradictory product information with less fluency. Consequently, they exhibit reduced judgmental confidence, leading to the development of more moderate attitudes.

These three studies contribute valuable insights to the fields of business and management, shedding light on ethical leadership's importance, the dynamics of collective learning in auctions, and the influence of dialectical thinking on consumer behavior.

Ethical Leadership with Both "Moral Person" and "Moral Manager" Aspects: Scale Development and Cross-Cultural Validation

Session Speaker:

Dr. Weichun Zhu (朱伟春)
Associate Professor of Management
Department of Management
College of Business and Public Management
Kean University
1000 Morris Avenue
Union, NJ 07083
Email: wzhu@kean.edu
Phone: (908) 737-4153

Biography:

Weichun Zhu is an Associate Professor of Management at the College of Business and Public Management, Kean University. He obtained his Ph.D. degree in management from the University of Nebraska Lincoln. He had previously taught at Penn State University, Guangzhou University, and Bloomsburg University of Pennsylvania. His primary research interests focus on leadership and ethics in organizations across cultures. His work has been published in numerous academic journals, including *Journal of Applied Psychology, Personnel Psychology, Journal of Organizational Behavior,* and *The Leadership Quarterly*. According to the Google Scholar, his work has been cited more than 12, 000 times (the h-index = 33, i10-index = 43). He currently serves as an associate editor for Journal of Business Research and serves on the editorial review board of Journal of Organizational Behavior.

Abstract:

The importance of ethical leadership in organizations has been increasingly recognized, especially as a shield against unethical employee behaviors and corporate misconducts. Ethical leadership has been theorized to include two aspects: "moral person" and "moral manager." This conceptualization resonates well with Chinese teachings of Confucius on leadership and management—namely xiuji (cultivating oneself) and anren (bringing the good to others). Based on the theoretical framework of ethical leadership, we develop and validate a new ethical leadership measure (ELM). Through qualitative studies (i.e., face-to-face interviews, open-ended surveys, and literature review) and five quantitative studies, we establish the reliability and convergent, discriminant, and predictive validities of the ELM in a Chinese context. In addition, using a US sample, we find that the ELM has partial measurement invariance across Chinese and American contexts.

Learning Unknown Private Valuation in Generalized Second Price Position Auction

Session Speaker:

Dr. Wei Yang (杨威)
Associate Professor
Long Island University at Post
720 Northern BLVD, Brookville, NY 11548
wei.yang@liu.edu

Biography:

Dr. Yang is an associate professor in the College of Management at LIU Post and the chairperson of the Business department. His current research focuses on developing machine learning algorithms to help managers make better decisions in dynamic pricing, revenue management and supply chain management. In addition to research, he is interested in consulting and providing industry-strength decision support systems for companies in the US and Asia using operations research models and techniques. Dr. Yang received his Ph.D. from Carnegie Mellon University in Pittsburgh, a Master's degree from Tsinghua University in Beijing and a Bachelor from Huazhong University of Science and Technology in Wuhan China.

Abstract:

The classical equilibrium analysis of the GSP auction by Edelman et al. (2007) and Varian (2007) assumes complete information available to all players, a crucial premise for theoretical development but may not reflect reality. This raises concerns about the applicability of such analysis and prompts researchers to explore equilibrium analysis under incomplete information. Over the past decade, an increasing number of studies have focused on GSP games under uncertainty, particularly in unknown private valuation, Bayesian-Nash equilibrium, social welfare loss or price of anarchy, and reserve price. However, the learning path for players in the GSP auction remains inadequately addressed in the literature. As a sequential and repeated auction with many players, the process of removing uncertainty in the GSP auction is similar to social observational learning, where information aggregation and herding play a crucial role. Furthermore, as the number of players increases, mean field game theory suggests that players' beliefs will converge to their expected value. In this paper, we propose a comprehensive cognitive framework that shows how players form and update their beliefs through collective learning. We present a mathematical model that provides quantitative details of our analysis and confirms that the hypothetical learning process leads to the convergence of beliefs or expected valuations. Simulation experiments further support our conclusion.

The Effect of Dialectical Thinking on the Integration of Contradictory Information

Session Speaker:

Dr. Mike Chao (Chenho Chao)
Director of the Russ Berrie Institute for Professional Sales and Professor of Marketing
Cotsakos College of Business, William Paterson University of New Jersey
1600 Valley Road, Room 3049, Wayne, NJ 07470
chaoc@wpunj.edu

Biography:

Marketing Professor Mike Chao, Director of William Paterson University's Russ Berrie Institute for Professional Sales (RBI), oversees all RBI programs and events, leads the design, development, and delivery of all RBI programming, and fosters relationships with corporate partners, professional sales organizations, K-12 schools, peer professional sales programs, and other higher education institutions.

Dr. Chao has taught many different courses such as Global Marketing, Marketing Management, Consumer Behavior, and Social Media Marketing at both undergraduate and graduate levels. He also has teaching experiences for the MBA and EMBA programs in Taipei, Singapore, Shanghai, as well as the U.S. and consistently received excellent teaching evaluations from his students.

Dr. Chao is a very productive and active researcher. He has published many high-quality journal articles. These journals include, but are not limited to, *Journal of Consumer Psychology, Journal of International Marketing, Journal of World Business*, and *Journal of Business Research*.

Abstract:

Although lower dialectical thinking has been associated with greater extremity in consumer responses to univalent information, we demonstrate that low, as compared to high, dialectical thinkers express more moderate attitudes when they result from processing contradictory information. Specifically, our studies find that contradictory product information is less fluently processed by consumers low (vs. high) in dialectical thinking, which reduces their judgmental confidence and, in turn, generates more moderate attitudes. We contribute to the literature by showing that in contexts of contradictory information integration, current theory regarding the consequences of dialectical thinking needs to be extended to include not only an attenuation of the extremity effect prior research has found, but a complete reversal. Our results further imply that processing fluency not only impacts attitude valence but, more generally, attitude extremity.

Chinese Institute of Engineers, USA/GNYC
2023 Annual Convention

Hyatt Regency Hotel, Jersey City, New Jersey
Saturday, September 23, 2023

Technical Symposium
(3:30 pm – 5:00 pm – Palisades I, II, III)

Session VI

Cloud Computing
(3:30 pm - 5:00 pm – Palisades III)

Session Chair

Dr. I-hsin Chung　　　　　　Senior Research Scientist, IBM Research

Session Speakers

Prof. Che-Rung Lee (李哲榮)　　Associate Professor of Computer Science, National Tsing Hua University

Dr. Seetharami Seelam　　　　Principal Research Scientist and Technical Lead, IBM Research

Susan Diamond　　　　　　Senior Engineering Manager at Twilio

Session: Cloud Computing

Session Chair:

Dr. I-Hsin Chung
Manager and Research Scientist
IBM Research
Yorktown Heights, New York
ihchung@us.ibm.com

Biography:

Dr. I-Hsin Chung holds a Ph.D. in computer science from the University of Maryland, College Park. He's a research scientist at IBM Research, specializing in system architecture, performance modeling, and tuning. His expertise spans data-centric and high-performance computing.

Currently, Dr. Chung leads collaborative co-design efforts for future data center systems, tailored for strategic workloads like cognitive and cloud computing. He excels in performance analysis across IBM platforms, including POWER, mainframe Z Systems, and Blue Gene systems.

With significant contributions to system software and performance analysis, Dr. Chung has been pivotal in projects like CORAL and Blue Gene supercomputer designs. He's also an adjunct professor at NYU's Courant Institute, underscoring his dedication to advancing knowledge in his field.

Session Introduction/Abstract:

Cloud Computing: Revolutionizing IT Infrastructure for Enhanced Resilience, Flexibility, and Innovation.

Cloud computing has emerged as a transformative paradigm, redefining how businesses and organizations approach their IT infrastructure. One of its key pillars is virtualization-based fault tolerance, a concept that enhances system reliability by creating virtualized instances of resources, ensuring uninterrupted operations even in the face of hardware failures or disruptions. This approach minimizes downtime and ensures business continuity, contributing to a resilient IT   ecosystem.

At the heart of cloud computing's evolution is the concept of Cloud Agnostic Architecture. This architectural approach transcends the constraints of specific cloud providers, enabling seamless portability and interoperability across different cloud environments. By decoupling applications from the underlying infrastructure, organizations can avoid vendor lock-in, maximize resource efficiency, and maintain control over their data and services.

Moreover, cloud computing is propelling innovation through System Co-design. This entails tailoring cloud infrastructure to meet the unique demands of advanced applications, such as flexible training of foundation models. In this context, the cloud environment is optimized to accommodate the intricate requirements of machine learning and AI model training. By harnessing the power of distributed computing and specialized hardware, organizations can expedite training processes, foster breakthroughs in AI research, and empower data-driven decision-making.

In summary, cloud computing is not merely a technological shift; it's a paradigm that empowers organizations to harness fault-tolerant virtualization, adopt cloud-agnostic strategies, and engage in collaborative co-design to unlock the full potential of advanced applications. By embracing these principles, businesses can create more resilient, flexible, and innovative IT ecosystems that lay the foundation for future growth and success.

Virtualization Based Fault Tolerance

Session Speaker:

Dr. Che-Rung Lee (李哲榮)
Associate Professor
National Tsing Hua University
HsinChu, Taiwan
cherung@cs.nthu.edu.tw

Biography:

Dr. Che-Rung Lee received his bachelor and master degrees from National Tsing Hua University in 1996 and 2000 respectively, and his Ph.D. degree from University of Maryland, College Park in 2006. He worked as a post-doctorial researcher in UC Davis during 2007-2008 and joined the Department of Computer Science in National Tsing Hua University as an assistant professor in 2008, and an associate professor in 2013. The research focus of Dr. Lee includes numerical methods, cloud computing, high-performance computing, heterogeneous computing, and performance optimization. He is PI or Co-PI of many academic and industry projects, and published many papers in different areas, such as IPDPS, CloudCom, BigData, ECCV, ACCV, AAAI.

Abstract:

In the era of cloud computing, virtualization-based fault tolerance that utilizes the continuous virtual machine (VM) migration to synchronize a VM and its remote replica is a common technique to achieve high availability. However, traditional live VM migration, whose goal is to minimize the system downtime, has a long duration owing to the expense of the pre-copy for machine status and memory content, which increases the period of failover when failures occur. In this talk, I will present Cuju, a virtualization-based fault tolerance system. It utilizes fast VM migration to accelerate the system backup, and several techniques to reduce the latency. Meanwhile, it has a Group Fault Tolerance (GFT) mechanism that allows a cluster of VMs to backup and restore efficiently. Last, I will talk about our recent work, called Fast VM Migration (FVMM), which utilizes the templating technique to accelerate the VM migration by reducing the cost of pre-copy. The templating technique that creates VMs from a master copy, called a template, is a usually used to deploy many similar VMs in a large virtual environment. FVMM employs VM templating to mitigate the cost of pre-copy.

System co-design for flexible training of foundation models in the cloud

Session Speaker:

Dr. Seetharami Seelam
Principal Research Scientist
IBM Research
1101 Kitchawan Rd, Yorktown Heights, NY, 10598
sseelam@us.ibm.com

Biography:

Dr. Seetharami Seelam is Principal Research Staff Member and a Technical Lead at IBM T. J. Watson Research Center where he provides leadership for the Hybrid Cloud Infrastructure Research group. Dr. Seelam is responsible for defining the strategy and implement the execution plan for HPC, AI, and Quantum on IBM Hybrid Cloud Platforms. He has over 15 years of industry experience as an engineer, research scientist, leader, strategist, public speaker, educator, and architect in Cloud Infrastructure, Cloud and AI Platforms, and High-performance Computing. His technical contributions to IBM earned him one IBM Corporate award, seven outstanding technical accomplishment awards (OTAA), and two outstanding innovation awards. He filed more than 40 patents (25 issued), published over 50 papers: received four best paper awards, one outstanding paper award.

Abstract:

Foundation models are a new class of AI models that are trained on broad data (typically via self-supervision) and that can be used in different downstream tasks. Due to self-supervision and the ability to train on massive amounts of unlabeled data, these models grew to have hundreds of billions of parameters, and they take many months on hundreds of GPU to train and generate a foundation model. So, AI Systems and middleware are critical to train these foundation models in scalable, cost-effective manner. In this talk, I will discuss the architecture of a new cloud-based AI System to train large scale foundation models. The system is built entirely out of open source software stack from hypervisor to guest operating systems, from container platforms to AI frameworks and libraries. It is natively built into IBM Cloud platform and the hardware and software stack is optimized for training of foundation models on hundreds of GPUs. We trained various foundation models with state-of-the-art accuracy in the shortest time on this platform. I will discuss the architecture, operational experience, and thoughts on the directions for the co-design of hardware and middleware for future AI Systems.

Session Speaker:

Susan Diamond
Senior Engineering Manager at Twilio
sseelam@us.ibm.com

Biography:

An AI infrastructure and cloud leader with deep expertise in machine learning infrastructure, cloud architecture, micro-service architecture and distributed system management; with rich experience in building high-performance, cross geographical and cross-cultural engineering teams. Proven track records in delivering new AI and cloud initiatives.

Susan Diamond was born and raised in Guangdong, China. She received a Master's degree in Computer Science at the University of St. Thomas in Minnesota in 2000 and a MBA degree in Marist College in New York in 2006.

Chinese Institute of Engineers, Greater New York Chapter
2023 High School Scholarship Award

Amy Lin（林姝言）is a junior at Princeton High School. She has a passion for math, science, and technology. Amy is the captain of her school's math team and a qualifier of American Invitational Mathematics Examination (AIME). She is also the founder of "Apps for Social Good" club, which has developed apps for food donation, attendance recording, COVID contact tracing, peer mentor matching, and water quality reporting. Amy has used machine learning to study the behavior, sensing and learning abilities in animals. She is also actively involved in community service, starting the summer STEM exposure program in her school district, and teaching computer coding at HomeFront, a nonprofit organization that helps families break the cycle of poverty. Amy enjoys playing piano, composing music, and ballet. As a gold level winner, she was invited to perform piano recital at Carnegie Hall in the Golden Key Music Festival. Excelling in calculus, chemistry, and computer science, Amy is recognized as an AP Scholar with Honor. She was also awarded silver medal at Le Grand Concours – the National French Contest,
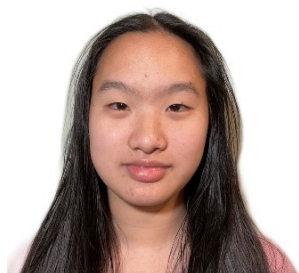
Carol Yang (楊凱若) is a junior at Yorktown High School. Inspired by her experience in Scouts BSA and her interests in environmental issues, Carol has conducted science research in the fields of environmental science and environmental engineering. She also actively participates in many extracurricular activities, including Yorktown Girls Varsity Tennis, Alliance for Broad Diversity, Varsity Athletes against Substance Abuse, and Future Business Leaders of America. Carol plays the viola in Westchester Youth Symphony, and has been selected to perform with the Area All-State Orchestra. She also serves as a co-president of Amnesty International, the treasurer of Tri-M Music Honor Society, and the treasurer of Concert Orchestra. In her spare time, Carol tutors viola and writing in school, and volunteers as a teaching assistant at Northern Westchester Chinese School.

Chinese Institute of Engineers, Greater New York Chapter
2023 High School Scholarship Award
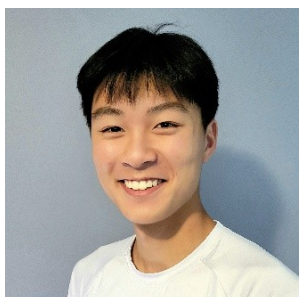
Edmund Tsou（鄒長豫）is a senior at Briarcliff High School. His favorite classes are physics and biology. Fueled by his passion for collaborative problem-solving, Edmund founded his school's robotics and competition chess teams, creating a platform for creativity and collaboration. An active lifestyle is essential to Edmund, evident in his rigorous gym workouts, pentathlon training, and taekwondo sparring. In 2023, his pentathlon scores ranked top 50 in the US, while his sparring competitions at the state and national levels placed him in the top 3 nationwide. Beyond athletics, he excels as a viola player, achieving recognition as an Area All-State musician, and received the Outstanding Musicianship Award at his school. During his leisure time, Edmund plays in chess tournaments, boasting an impressive 2,000+ Elo rating and school chess championship wins. He also enjoys playing pickleball, badminton, and tennis with friends. Edmund is immensely interested in the field of biomedical engineering. He has conducted research with his school's science research program, developing novel brain-computer interfaces enhanced by pre-trained generative language models.

Karen Yang（楊凱恩）is a junior at Yorktown High School. She is a member of her school's Science Olympiad team that won the Lower Hudson Valley regional competition and advanced to the New York State Science Olympiad tournament. Karen has been on the varsity tennis team since freshman year and participates in many other extracurricular activities. She plays the violin in her school's concert orchestra, chamber orchestra, symphony orchestra, pit orchestra, as well as the Westchester Youth Symphony. She has also been selected to perform with the Area All-State Orchestra. Karen is the vice president of Tri-M Music Honor Society, a co-president of Amnesty International, and the president of her high school orchestra. She is currently doing a science research project on wastewater management and resource recovery.

Chinese Institute of Engineers, Greater New York Chapter
2023 High School Scholarship Award

Meiya Xiong (熊梅雅) is a junior at Princeton High School. Over the summer, Meiya interned in a lab at Princeton University, where she worked on a research project on using pulsed heating for nonequilibrium ammonia synthesis, seeking to better understand a more energy-efficient method of producing ammonia. She also attended the Asian American Academy of Sciences and Engineering (AAASE) Summer Academy, where her team won the 2nd place Presentation Award for their proposal to harness energy from wastewater. Joining the AAASE Junior Board, she became involved in the work on Asian American advocacy and environmental awareness. Excelling in calculus, economics, and language arts, Meiya is recognized as an AP Scholar with Distinction. She enjoys being a staff writer for The Tower, the student-run newspaper, and she is founding a school science journal. Passionate about music, Meiya plays the flute and loves playing in concerts and in the pit orchestra for the school musical. She was selected to perform in the Central Jersey Music Educators Association regional band and the National Flute Association high school flute choir. In addition, she is part of a group that volunteers in a first aid squad's cadet program.
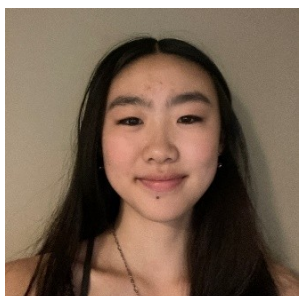
Mia Lee (李凱如) is a senior at New Rochelle High School. She is very creative and aspires to pursue a career in the visual arts. Mia has been a part of the performing and visual arts education program since her freshman year. As an AP scholar, Mia has created the art portfolios for AP drawing and AP 2-D art and design and is currently working on the portfolio for AP 3-D art and design. She has also taken the college biology course, and often finds inspiration in biology for her artwork. Mia won gold with her guzheng ensemble in 2019 and has performed at the Global Talent Show and Lincoln Center Awards Concert. She serves on the board of National Art Honors Society and is working to start an Asian Culture Club in her school.

William Sun (孫培鴻) is a junior at West Windsor-Plainsboro High School South. His favorite subject is computer programming. William is involved in the programming subdivision of the Robotics team, passionately developing algorithms to control and improve the performance of robots. He also enjoys playing video games and has used software tools such as Roblox Studio to create video games with immersive and fun online experiences. William is the woodwind captain in the marching band, and often travels across the state to participate in various activities. He is also a Saxophone Choir member in Youth Orchestra of Center Jersey, frequently performing in concerts as a first alto saxophonist and playing a variety of classical repertoire as a soloist.
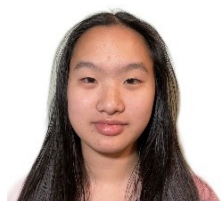
Chinese Institute of Engineers, Greater New York Chapter
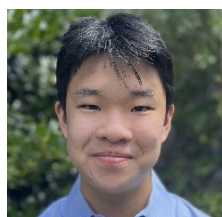## 2023 High School Scholarship Program
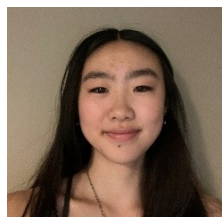
李凱如– 古箏獨奏
Mia Lee – Chinese harp solo

林沖夜奔 ..…………………………….………..…….…… 陸修棠、王巽之
Night Escape of Lin Chong (from the story of *Water Margin*)

楊凱若 – 中提琴獨奏
Carol Yang – Viola solo

匈牙利舞曲第五號
Hungarian Dance No. 5 ....…………..………. Johannes Brahms

孫培鴻–中音薩克斯風獨奏
William Sun – Alto saxophone solo

Sonata, Op. 19 for E♭ Alto Saxophone .... Paul Creston

楊凱恩– 小提琴獨奏
Karen Yang – Violin solo

Romance for Violin in F Major .... Ludwig van Beethoven

熊梅雅 – 長笛獨奏
Meiya Xiong – flute solo

Airs de Ballet d'Ascanio .... Camille Saint-Saëns
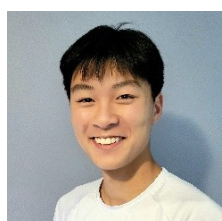
鄒長豫 – 科學研究報告和跆拳道示範
Edmund Tsou – Science research presentation & Taekwondo demonstration

Breaking barriers: Low-cost electroencephalogram-based brain-computer interface communication augmented by generative large language model

林姝言 – 詩歌朗誦和鋼琴演奏視頻
Amy Lin – Chinese poem recitation & Piano recital video
水調歌頭 明月幾時有 ..…………………………….……..……… 蘇軾
Prelude to Water Melody – When will the bright moon appear
The Lark (from *A Farewell to Saint Petersburg*) .... Mikhail Glinka

CIE-USA ANNUAL AWARDS

The **CIE Distinguished Achievement Award** is presented to a person of Chinese origin who has significantly contributed to the fundamental development of science, engineering, and technology.

The **CIE Distinguished Service Award** is presented to a person of Chinese origin whose work in science, engineering, and technology has significantly benefited a community.

The **Institute Service Award** recognizes an individual who has performed outstanding service to the Institute.

Award Winners

The award winners for the past years are listed as follows:

Year	Award Winner	姓　名	Achievement
1957	Mr. K.C. Li	李 國 欽	Leadership in production of strategic metals, i.e. Tungsten, Tantalum, Molybdenum, Columbium, Hafnium, Zirconium and their alloys.
1958	Dr. Tsung Dao Lee Dr. Chen-Ning Yang	李 政 道 楊 振 寧	Co-authors on three papers on "Nonconservation of parity." Co-winners of Nobel Prize of physics in 1957.
	Dr. Chien-Shuing Wu	吳 建 雄	Performed experiments for both doctors Lee and Yang, and confirmed the authenticity of their theory
	Mr. Ieoh-Ming Pei	貝 聿 銘	Recognized as one of the top ten architects in the United States.
1959	Mr. Wen-Tsing Chow	周 文 俊	Inertial navigation and guidance system for missiles and space vehicles.
	Prof. Lan-Jen Chu	朱 蘭 成	Leading authority on microwave and special antennas.
	Prof. Yu-Hsiu Ku	顧 毓 琇	Leading engineer mathematician whose analysis of non-linear systems worldly known.
1960	Dr. Kuan-Han Sun	孫 觀 漢	Leading engineer and physicist in nucleonics field. Helped setting up the nuclear engineering laboratory in Hsin-Chu, Taiwan.
	Prof. Ju-Chin Chu	朱 汝 瑾	Well known consulting engineer and scientist. Unit operations in process development and engineering.
	Dr. Chao C. Wang	王 兆 振	Research in solid state microwave electronics, thermo-ionic emission and microwave plasma interaction.
1961	Prof. Tung-Yen Lin	林 同 棪	Leading authority on Prestressed Concrete.
	Dr. Wen-Yuan Pan	潘 文 淵	Contribution to the Ultra-high frequency technique, leading to the implementation of wider field of television service.
	Dr. Luke C. L. Yuan	袁 家 騮	Well-known figure on design, construction and experiments on high energy accelerators.
1962	Prof. David K.	鄭 鈞	Advanced research on antenna and phased array.

	Cheng		
	Dr. Thomas T. H. Lee	李 天 和	Research and development of high-power vacuum interrupters for the power industry.
	Prof. Shih I Pai	柏 實 義	Theories on magnetogasdynamics and plasma dynamics.
1963	Prof. Shu-Tien Li	李 書 田	Well-known author and consulting engineer. Also his development work on Unified Energy-Matrix Analysis."
	Prof. Chia Chiao Lin	林 家 翹	Contributions to the theory of hydrodynamic stability and theory of turbulence.
1964	Dr. Kern K. N. Chang	張 可 南	Outstanding theoretical and experimental research on electro-beam focusing and on parametric and tunnel diode devices.
	Prof. H. Y. Fan	范 緒 筠	Achieved international prominence in searching for the essential physical characteristics of semiconductors.
	Mr. T.C. Tsao	趙 曾 珏	Engineer, scientist, author and administrator of international renown. Fellow IEEE, Fellow AAS, MCIE, MIKE (United Kingdom), MASME, MIM, etc. Ardent supporter and past president of CIE.
1965	Prof. Ven-te Chow	周 文 德	World-known contribution in open-channel hydraulics.
	Prof. Y. C. Fung	馮 肇 楨	Authority on aeroelasticity and solid state mechanics.
	Prof. Choh-Hao Li	李 卓 皓	World famous bio-chemist, first isolated ACTH, then TSH, recently completed analysis of HGH (human growth hormone).
1966	Prof. C. J. Huang	黃 振 榮	Research in interphase mass transfer mechanisms.
	Prof. Tung-Hua Lin	林 同 燁	Authority on elastic and plastic behavior of structures to dynamic load.
	Dr. P. K. Tien	田 炳 耕	Outstanding research on parametric amplifiers and gas lasers.
1967	Prof. Arthur W. Lo	羅 旡 念	Formation of some of the fundamental principles of digital electronics and development of a number of semiconductor and magnetic digital devices and circuits.
	Dr. Wellington H. T. Loh	陸 孝 同	Leading authority on dynamics and thermodynamics of re-entry and planetary entry.
1968	Prof. Chih-Bing Ling	林 致 平	Researcher in the field of applied mechanics and mathematics.
	Prof. Chia-Shun Yih	易 家 訓	Recognized for his achievements on the theory of nonhomogeneous stratified flow.
	Mr. Edward K. Nieh	聶 光 坡	Instrumental in the formulation of the Chinese Institute of Engineers, New York, Inc.
1969	Dr. Morgan C. Y. Sze	施 銓 元	In recognition for his work in the field of Chemical Engineering.
	Dr. An Wang	王 安	Development of computer systems and electronic

			calculators.
1970	Dr. Way Dong Woo	何 惠 棠	For his contribution in the field of digital systems.
1971	Mr. Walter Fei	費 驊	For his leadership and outstanding services in engineering management.
	Dr. Hsuan Yeh	葉 玄	For his outstanding contribution in the field of fluid and analytical mechanics.
	Dr. Utah Tsao	曹 友 德	For his creative contribution in chemical process design.
	Mr. Benjamin K. Cheng	鄭 國 賓	Leadership and service to the Chinese Engineering Society.
1972	Dr. T. W. Liao	廖 增 式	For his high power and high voltage engineering research and development.
	Mr. C. D. Shiah	夏 勤 鐸	For his contributions in petroleum processes.
	Mr. Y. C. Yang	楊 裕 球	For his advanced concept in structural design.
	Mr. Shao C. Jem	詹 紹 啟	For his enthusiastic and consistent service to CIE-USA.
1973	Dr. Sin-I Cheng	程 心 一	For his contribution to Jet, Rocket, Nuclear, Ion, and Electric Propulsion.
	Mr. Jeffrey Chu	朱 傳 渠	For his contribution to The Continuous Development and Management of Computer Technology for the Past Quarter Century.
1973	Mr. J. T. Shaw	蕭 存 人	For his outstanding leadership in Development Industrial Enterprises and in Fostering International Relationship with Southeast Asia.
1974	Mr. Yun-Suan Sun	孫 運 璿	For his outstanding leadership and contributions in promoting technological research and development in The Republic of China.
	Dr. Hung-Chang Lin	凌 宏 璋	For his pioneering contributions to the mono-lithic integrated electronics technology
	Dr. Kang-Jen Liu	劉 康 仁	For his outstanding contributions to pure and allied chemistry.
1975	Mr. K. T. Li	李 國 鼎	For his outstanding contribution to the mobilization of productive resources in the Republic of China.
	Dr. Ernest Kuh	葛 守 仁	For his outstanding contribution to research and teaching in circuit theory and systems and his leadership in engineering education.
	Dr. George C. Sih	薛 昌 明	For his outstanding contribution in research and teaching in fracture mechanics.
1976	Mr. K. S. Chang	張 光 世	For his leadership in promoting the economic growth and industrial expansion in the Republic of China.
	Mr. H. C. Fang	方 賢 齊	For his contribution to the development of telecommunication systems in the Republic of China.
	Dr. Simon K. Chen	陳 國 祥	For his outstanding contribution to the development of diesel engines.
	Dr. Samuel C. C. Ting	丁 肇 中	For his outstanding contribution in the discovery of the "J" particle triggered the finding of a whole family of similar particles.

1977	Mr. Jerome S. N. Hu	胡 新 南	For his outstanding leadership in modernizing and expanding the petrochemical industries in the Republic of China.
	Dr. A. Tobey Yu	俞 靄 庭	For his contribution in the field of Material handling technology related to the design and construction of ship-barge loading systems.
	Dr. Wen H. Ko	葛 文 勛	For his contribution in bio-medical engineering and teaching.
1978	Mr. Lan-Kao Chen	陳 蘭 皋	For his distinguished leadership in modernizing and expanding the power industry in the Republic of China.
1978	Mr. I-Fang Tang	鄧 義 芳	For his outstanding contributions to the success of the industrial and economic development in the Republic of Singapore.
	Mr. Kuo-Chi Wang	王 國 琦	For his outstanding service to CIE in promoting the cooperation between the CIE/ROC and CIE/USA.
	Dr. Ti-Kang Kwei	桂 體 剛	For his pioneering contributions in the composite and diffusion in macromolecular systems.
	Dr. Tingye Li	厲 鼎 毅	For his fundamental contributions to laser-resonator theory and his outstanding contributions in optical communications.
1979	Mr. Chang-Ching Wang	王 章 清	For his outstanding contribution in the municipal planning and transportation engineering.
	Mr. Hsiao-Chang Yen	嚴 孝 章	For his outstanding worldwide contribution in construction engineering.
	Dr. Catherine S. H. Chen	陳 夏 瑞 華	For her contribution to the advancement of polymer chemistry and engineering.
	Dr. Mo-Shing Chen	陳 謨 星	For his contribution to the advancement of electrical power engineering and technology.
	Mr. Frank Y. S. Chen	陳 耀 生	For his dedicated service to the Institute.
	Dr. Henry L. Wen	溫 陵 雄	For his dedicated service to the Institute.
1980	Mr. William Y. T. Chao	趙 耀 東	For his contribution to the steel industry in the Republic of China.
	Mr. Hsu Chang	張 煦	For his contribution to magnetic memories and computer science.
	Mr. Gilbert Chin	陳 耀 煜	For his contribution to the fundamental understanding of crystal plasticity and to the development of magnetic alloys.
	Mr. George C. Lee	李 元 兆	For his contribution to structural engineering, bio-mechanics, and engineering education.
1981	Dr. T.S. Lin	林 挺 生	In recognition of his outstanding industrial leadership, educator and citizenship.
	Mr. Yung-Ning Wei	韋 永 寧	In recognition of his exemplary leadership in promoting industrial development in the Republic of China.

	Dr. Leonard Y. Liu	劉 英 武	In recognition of his outstanding organizational capability and system management and operation.
	Dr. Y. L. Fan	范 又 陵	In recognition of his excellent leadership in CIE operation.
1982	Mr. Yi-Ting Wong	汪 彝 定	In recognition of his outstanding contribution to the international trade promotion for ROC.
	Mr. S. F. Tung	董 世 芬	In recognition of his life-long devoted service in petrochemical industry and as a successful manager of national enterprise.
	Dr. Hwa-Nien Yu	虞 華 年	In recognition of his outstanding contribution to silicon technology and his pioneering work in VLSI technology.
	Mr. T. F. Huang	黃 子 發	In recognition of his numerous contributions in naval architecture and his successful design and building of the world's largest crude oil tanker.
	Dr. Roxy Ni Fan	范 倪 如 珍	In recognition of her contribution to the modern printing technology.
1982	Mr. Y. C. Yang	楊 裕 球	In recognition of his devoted institute service and working spirit.
1983	Dr. King-Sun Fu	傅 京 生	For his leadership in Engineering education and contribution to pattern recognition.
	Mr. David S. Lee	李 善 麟	For his successful development of computer peripheral industry.
	Dr. Chi-Cheng Chang	張 繼 正	For his leadership in applied scientific management to government service.
	Mr. Ta-hai Lee	李 達 海	For his unique effort and success in petroleum industry.
	Mrs. Linda Liu	劉 黎 琬	For her devoted service to CIE/USA.
1984	Dr. Morris Chang	張 忠 謀	For his outstanding leadership and pioneering contribution to electronic industry.
	Dr. David H. Cheng	鄭 鴻	For his outstanding contribution to engineering education.
	Dr. T. Y. Shen		For his outstanding achievement in medicinal chemical research.
	Dr. S. S. Shu	徐 賢 修	For his contribution in promoting industrial research and development in the Republic of China.
	Dr. Vivin W. Yen	嚴 吳 舜 文	For her pioneering contribution and leadership in textile and automotive industries in the Republic of China.
1985	Dr. Alfred Y. Cho	卓 以 和	For his outstanding research in new technology, materials and devices.
	Mr. W. M. Lu	盧 偉 民	For his achievement in city planning both in the USA and abroad.
	Dr. David I. J. Wang	王 義 炤	For his advancement of new technology and new industrial ventures.
	Dr. Taylor G. Wang	王 贛 駿	For his contribution to space physics.
	Dr. C. H. Yen	閻 振 興	For his pioneering promotion of METS and National Education in the Republic of China.

	Dr. D. H. Hu	胡 定 華	For his leadership in technological development and management in the Republic of China.
	Dr. Vincent H. K. Chu	瞿 浩 光	For his unwavering and devoted service to CIE.
1986	His Excellency C. K. Yen	嚴 家 淦	For his uninterrupted support and policy guidance to the METS since its inception in 1966.
	Dr. James Wei	韋 潛 光	For his excellent leadership in engineering research and education.
	Dr. Y. C. L. (Susan) Wu		For her pioneering work in magnetohydrodynamics research and leadership in energy conversion R & D programs.
	Dr. Charles Kao	高 錕	For his pioneering research and accomplishment in the field of optical fiber communications.
1987	Dr. J. Carl Hsu	許 濬	For his leadership and outstanding contributions to the development of switching and computer systems.
	Mr. Stanley Shih	施 振 榮	A pioneer contributor to a successful high-tech industry in a developing country.
	Dr. Paul Ching Wu Chu	朱 經 武	For his pioneering contribution to superconductivity.
1987	Dr. Sun-Nan Hong	洪 勝 男	For his leadership and dedication to the formation of the CIE-USA National Council.
	Dr. Kuei-Wu Tsai	蔡 桂 伍	For his leadership and dedication to the formation of the CIE-USA National Council.
1988	Dr. L. A. Chen	陳 履 安	For his contribution to the promotion planning and coordination of the technological in the Republic of China.
	Dr. H. T. Kung	孔 祥 重	For his contribution to the development of systolic arrays in computer science.
	Dr. Patrick Kung	龔 忠 恕	For his contribution to the medical applications of monoclonal antibody and T-cells.
	Dr. Otto C. C. Lin	林 垂 宙	For his scientific achievements in polymeric field and his contribution to the establishment of an outstanding material research institute in the Republic of China.
	Dr. Wen Lin	林 文	For his dedicated and unselfish service to the professional cause of this Institute.
1989	Dr. Herbert Chang	張 佑 邦	For his outstanding contribution to the Electronic Switching Technology and Telecommunication Industry.
	Dr. Chintay Shih	史 欽 泰	For his contributions to the Advancement of the Micro-Electronic Technology and Electronic Industry in the Republic of China.
	Mr. Yung-Shih Kuan	關 永 實	For his distinguished service in the Advancement of Petrochemical Industry in the Republic of China.
	Dr. Shih-Chien Yang	楊 世 緘	For his distinguished contributions to the Scientific and Industrial in the Republic of China.
	Ms. Grace C. C.	李 慶 珠	For her leadership and dedication to the Institute and

	Lee		the Professional Scientific Community.
	Dr. Chung-Ming An	安 仲 明	For his dedicated service to the Institute and Technical Advancement in the Engineering Society.
1990	Mr. Arthur Y. Chen	陳 豫	For his outstanding contributions to the engineering and construction industry in ROC.
	Dr. Michael C. Chen	陳 建 國	For his distinguished service and outstanding financial management for the Institute.
	Dr. N. Y. Chen	陳 迺 沅	For his outstanding contributions to the Zeolite Catalyst Technology and Petrochemical Industry
	Mr. Ya-Moh Dong	童 亞 牧	For his distinguished service in the advancement of engineering and construction industry in ROC.
	Dr. Chin-Lung Yeh	葉 金 龍	For his distinguished service to the Institute and the METS.
1991	Dr. Shirley W. Y. Kuo	郭 婉 容	For her distinguish service in the economic planning and development in ROC.
	Dr. Eugene Y. H. Chien	簡 又 新	For his outstanding contribution to environment legislation and creativity in the development of Environmental Awareness in ROC.
	Dr. Gordon T. Chen	陳 大 雄	In recognition of his service to the Institute.
	Dr. Eric S. Hsiue	薛 一 新	In recognition of his service to the Institute and METS.
	Dr. Wei-Kuo Lee	李 維 國	In recognition of his dedicated service to the Institute.
1992	Dr. Anthony C.H. Ku	谷 家 恆	For his achievement in applied research and technology development.
	Dr. Norman N. Li	黎 念 之	For his achievement in separation science and technology.
	Dr. K. K. Wang	王 國 金	For his achievement in automation and manufacturing engineering.
	Mr. Vincent C. Siew	蕭 萬 長	For his leadership in promoting the economic growth in Taiwan.
1992	Mr. Junru Ma	馬 俊 如	For his achievement in promoting foreign expert and technology exchange for China.
	Dr. Charles M. Tsai	蔡 明 曉	For his dedicated service to the Institute and METS.
1993	Dr. Winston H. Chen	陳 文 雄	For his accomplishment and leadership in the electronics contract manufacturing business.
	Dr. Fenggan Zhuang	莊 逢 甘	For his outstanding contribution to the fundamental science in aerodynamics and the development of aerospace technology in China.
	Mr. Patrick Wang	王 華 燕	For his entrepreneurship and successful commercialization of microwave communication technology in Taiwan.
	Mr. Jie Wang	王 吉	For his exemplary entrepreneurial spirit and managerial skill in transforming a research institute to a prosperous enterprise in Jiangsu.

	Ms. Li-lan Zhu	朱 麗 蘭	For her leadership in planning and implementation of central policies for the development of modern technologies in China.
	Dr. Shu-Jou Lee	李 樹 久	For his dedicated service and accomplishment in guiding the economic development in Taiwan.
	Dr. Janpu Hou	侯 展 璞	For his dedicated service to the Institute and SATEC
1994	Dr. Hui Hwui Chin	陳 幼 慧	For her dedicated service to the Institute.
	Dr. David C. Chang	張 鐘 浚	For his accomplishment in the academia and leadership in the field of electromagnetic
	Dr. Ying-Kao Lee		For his outstanding contribution to the areas of automotive and electronic coatings
	Mr. Chung-Yu Wang	王 鐘 渝	For his leadership and accomplishment in the steel industry in Taiwan
	Prof. Xuan Wang	王 選	For his leadership and accomplishment in the Chinese typesetting system in China
	Mr. Yun Kuo	果 芸	For his dedicated service and accomplishment in guiding the information technology in Taiwan
1995	Mr. Chung-Kung Shih	石 中 光	For his leadership and outstanding contribution to public construction
	Mr. C. S. Liu		For his pioneering contribution to pharmaceutical manufacturing industry
	Dr. Chih Yuan Lu	盧 志 遠	For his outstanding achievement in submicron IC development
	Mr. Guangnan Ni	倪 光 南	For his excellent contribution to the development of computer industry
	Dr. Thomas P.K. Chang	張 平 康	For his dedicated service to the Institute
1996	Mr. Robert H. C. TSAO	曹 興 誠	For his achievements and outstanding contribution in the development of microelectronics industries in ROC.
	Dr. Steve S. Cheng	鄭 瑞 雨	For his achievements and outstanding contribution in the development of communication industries in ROC.
	Mr. Hanyan Yang	楊 漢 炎	For his dedication and outstanding service to the course of technology transfer from U.S. Chinese engineering communities to the People's Republic of China.
	Dr. Chiao Yeh	葉 翹	For his dedication and outstanding service to the professional cause of this Institute.
1997	Dr. Chen Chiang	蔣 震	For his outstanding contribution in engineering education and leadership in modernization of the Chinese machinery industry.
	Dr. Chi-Fu Den	鄧 啟 福	For his outstanding contributions in engineering education and in the promotion of cooperation among Chinese Universities.
	Dr. Shilie Weng	翁 史 烈	For his outstanding contributions in engineering education and in the promotion of cooperation among Chinese Universities.

	Dr. Tien-Pei Lee	李 天 培	For his outstanding contribution to opto-electronics and communications.
	Dr. Ding Yuen Yang	楊 丁 元	For his outstanding contribution in the advancement of micro electronics and computer technologies in Taiwan, ROC.
	Dr. Tsu-Wu Chou	周 祖 武	For his leadership and dedications to the Chinese engineering communities.
	Mr. Jun Ru Ma	馬 俊 如	In recognition of his outstanding contribution to SATEC program.
	Dr. Yen-Shiang. Shih	施 顏 祥	In recognition of his outstanding contribution to the METS program.
	Mr. K. C. Wang	王 國 琦	In recognition of his outstanding contribution to the METS program.
	Dr. Nai Wang	王 迺	In recognition of his outstanding contribution to SATEC program.
1998	Dr. Benjamin Chu	朱 鵬 飛	For his outstanding achievement in the fields of physical chemistry, polymer physics and material science.
	Dr. Shui Yee Lee	李 瑞 儒	For his leadership and technical innovation in the development of service design and inventory management system.
	Mr. Michael Mou	莫 自 治	For his outstanding contribution in the development of personal telecommunication products.
	Dr. Bingqun Xiong	熊 秉 群	For his achievements and outstanding contribution in the development of national telecommunication industry in PRC.
	Dr. Kuo-Kuang Hsu	許 國 光	For his enthusiastic and consistent services to the Institute
1999	Dr. Lin-Nan Lee	李 寧 南	For his outstanding service in the field of Wireless and Satellite Communications
	Dr. Won T. Tsang	曾 煥 添	For his contribution to the advancement of Semiconductor Laser Material and Devices
2000	Dr. Bede Liu	劉 必 治	For his distinguished contribution to engineering education, network theory and digital signaling processing.
	Dr. William C. Y. Lee	李 建 業	For his contribution to wireless communications – as an author, inventor, researcher and manager.
	Dr. Da-Hsuan Feng	馮 達 旋	For his dedicated effort in coordination of Chinese American professional societies
	Dr. Sing H. Lin	林 星 雄	For his dedicated service to the Institute
	Mr. Ming-Hao Liu	劉 明 灝	For his long standing dedication service to the Institute
2001	Mr. Benjamin Cheng	鄭 國 賓	For his 35 years' dedication service to the Institute
	Dr. Tim Chen	陳 啟 雄	For his dedication service to the Institute
	Dr. Yih-yun Hsu	許 翼 雲	For his outstanding contribution to fundamentals of boiling hear transfer and nuclear power safety

	Dr. Cheng-Wen Wu	吳 成 文	For his outstanding contribution to the advancement of biomedical research
2002	Dr. Ovid J. L. Tzeng	曾 志 朗	For his outstanding services in education, research and policy making
	Dr. Chia Jung Liu	劉 家 榮	For his dedicated service to the Institute
2003	Dr. Chun-Yen Chang	張 俊 彥	For his pioneer contribution to semiconductor industry and outstanding services in education
	Dr. Jin Wu	吳 京	For his outstanding services in high education and policy making
	Mr. Edward Yang	楊 耀 武	For his leadership and contribution to progress in information technology
	Dr. David Shaw	蕭 台 戈	For his contribution to research in aerosol and nanotechnology
	Dr. Edward Cheng	鄭 世 康	For his contribution to Hubble telescope project
	Dr. Ted Chongpi Lee	李 聰 碧	For his dedicated service to the Institute
2004	Dr. Carter Tseng	曾 憲 章	For his pioneer work and leadership in high-tech industry in Taiwan
	Dr. Ya-Qin Zhang	張 亞 勤	For his leadership and contributions in software development
	Dr. Frank Cheng	陳 沙 鳧	For his dedicated service to the Institute
2005	Dr. Johnsee Lee	李 鍾 熙	For his leadership and contribution to industrial research and development in Taiwan
	Dr. Peter T. C. Shih	石 大 成	For his pioneer leadership in the photonics industry in Taiwan
	Dr. William M. Tang	唐 明 武	For his leadership in fusion research and contribution to fundamentals of plasma science
	Dr. Allen Chen	陳 政 仁	For his dedicated service to the Institute
2006	Dr. Harold Hwaling Szu	斯 華 齡	For his contribution to neural networks applications in information sciences
	Mr. John T.Yu	余 俊 彥	For his leadership in the global engineering and construction business in Taiwan
	Dr. Yi-Kang An	安 宜 康	For his dedicated service to the Institute
2007	Dr. Tse Wen Chang	張 子 文	For his contribution to insights in making genetically engineered antibodies and bioscience area
	Dr. Stephen Y. Chou	周 郁	For his contribution to nanoscale patterning and the scaling of devices
	Dr. James C. M. Hwang	黃 正 民	For his contribution to development of molecular beam epitaxy manufacturing and hetero-structure devices and materials
	Mr. Huaping Huang	黃 華 平	For his contribution to lead the development of the largest hydroelectric river dam (China Yangtze Three Gorges Dam) in the world

	Dr. Biing-Hwang Juang	莊 炳 湟	For his contribution to speech coding and speech recognition
	Mr. Kuo-Ann Chiao	焦 國 安	For his dedicated service to the Institute
2008	Ms. Mary S. Chan	肖 美 蕾	For her leadership in wireless innovation
	Dr. Jay Lee	李 杰	For his leadership in manufacturing development and devoted service to engineering community
	Dr. Paul Lin	林 寶 樹	For his leadership in technology and industry development of broadband information and digital video
	Dr. Ralph Yang	楊 祖 保	For his contribution to hydrogen research
	Dr. Chein-Chi Chang	張 建 祺	For his dedicated service to the Institute
2009	Ms. Anne H. Chow	周 慧 安	For her leadership in business development and entrepreneurship
	Dr. Jingshown Wu	吳 靜 雄	For his contributions in telecommunication development in Taiwan
	Dr. Hai-Lung Dai	戴 海 龍	For his contributions in molecular and surface sciences
	Dr. H. Jonathan Chao	趙 鴻 翔	For his dedicated service to this Institute
2010	Dr. Jason Hsuan	宣 建 生	For his leadership in business development and entrepreneurship
	Dr. Andrew Wang	王 惠 鈞	For his outstanding contributions in anti-cancer drug-DNA complex
	Dr. Jun Ni	倪 軍	For his outstanding contributions in manufacturing development
	Dr. Jun-Min Liu	劉 主 民	For his dedicated service to this Institute
2011	Dr. Burn Lin	林 本 堅	For his contributions in immersion lithography technology which revolutionizes the global semiconductor manufacturing process
	Dr. Jyuo-Min Shyu	徐 爵 民	For his contributions in nanotechnology and leadership for Industrial Technology Research Institute (ITRI)
	Dr. Paul Lin	林 少 達	For his dedicated service to this Institute
2012	Dr. Victor Zue	舒 維 都	For his leadership in developing and executing long-term engagement plan on advanced education in China
	Ms. Marjorie Hsu	許 鳳 飛	For her innovative approach on fusion of business and technology for advancing wireless services
	Dr. Kai Li	李 凱	For his contributions to revolutionize data storage management and scalable display in computer technology
	Dr. Rong Chang	張 榮	For his dedicated service to this Institute
2013	Dr. Priscilla Lu	陸 美 衍	For her leadership in developing advanced-technology businesses and promoting entrepreneurship education

			programs
	Dr. Shoucheng Zhang	張首晟	For his groundbreaking discovery of quantum spin Hall Effect
	Dr. Shu-Ping Chang	張書平	For his dedicated service to this Institute
2014	Dr. Wen-Hann Wang	王 文 漢	For his outstanding technology contributions and corporate leadership
	Dr. Xiang Zhang	張 翔	For his pioneering contributions in metamaterials and creation of the first optical superlens with resolutions beyond the fundamental diffraction limit
	Dr. Xiaowei Zhuang	莊 小 威	For her pioneering contributions in breaking the diffraction barrier with super-resolution imaging of cells
	Dr. Howard Chen	陳 浩	For his dedicated service to this Institute
2015	Dr. Chih- Kung Lee	李 世 光	For his leadership in driving technological innovation and industrial collaboration, and his invention of modal sensors and actuators.
	Dr. Tso-Pin Ma	馬 佐 平	For his contribution to interdisciplinary research in the science and technology issues related to semiconductor devices.
	Dr. Donald T. Tang	唐 道 南	For his pioneering work on VLSI design automation and leadership in the development of world's first continuous Chinese speech recognition system.
	Dr. Yew-Huey Liu	劉 玉 慧	For her devoted service to this institute.
2016	Dr. Charles Ching-Hsiang Hsu	徐 清 祥	For his vision and leadership in the semiconductor industry.
	Dr. Minda Ho	何 岷 達	For his technical leadership in industry gas production and extraordinary contribution to the Chinese chemical industry.
	Dr. Paul Tang		For his leadership in driving health information technology to improve the quality of health care.
	Dr. Tien-Jen Cheng	鄭 天 人	For his devoted service to this institute.
2017	Dr. James Si- Cheng Chao	趙 錫 成	For his leadership in adopting energy-efficient and eco-friendly ship design and technology.
	Dr. Man-Chung Tang	鄧 文 中	For his outstanding contribution to bridge design and construction engineering.
	Dr. Janpu Hou	侯 展 璞	For his leadership in developing fiber optic technology and establishing the Sino-American Technology and Engineering Conference (SATEC).
	Dr. Sean S. H. Wang	王 韶 華	For his contribution to high-tech incubation and international research collaboration.
	Mr. Richard Liu	劉 強 東	For his visionary leadership in developing the e-

			commerce platform and drone technology.
	Mr. William Yeh	葉振忠	For his contribution to information-sharing technology and integrated case management system.
	Dr. C. Eric Wu	吳振藩	For his contribution to the Institute, and to the computer industry in the areas of computer architecture, operating system, and cloud automation.
	Dr. Jun-Min Liu	劉主民	For his contribution to the advancement of scheduling algorithm, capacity planning, and risk management in telecom and aviation industries.
2018	Dr. Yuh-Jier Mii	米玉傑	For his leadership at TSMC and the semiconductor technology.
	Dr. Kang Wang	王康隆	For his leadership in magnetic memory technologies and contributions to topological spintronics.
	Mr. Clement Lin	林茂昌	For his leadership at Nexcom, Robotics, Industry 4.0, and being the driving force in Taiwan.
	Dr. Kun-Lung Wu	吳坤龍	For his contribution to the Institute.
2019	Dr. Jeannett M. Wing	周以真	For her intellectual in computer science, particularly in trustworthy computing.
	Mr. Tom Cho	卓桐華	For his leadership at Inventec Corp. and the electronic industry in Taiwan.
	Dr. Yuanyuan Zhou	周源源	For her setting-up an exemplary model to the Chinese American community as both an outstanding researcher and a successful entrepreneur.
	Dr. Stephen S. Yau	丘錫生	For his dedication and leadership in software engineering and science.
	Dr. I-Hsin Chung	鍾一新	For his devoted service to this institute.
2020-2021	Dr. Leon O. Chua	蔡少棠	For his contributions to Memristor and other forms of this concept for Neural Network Applications
	Dr. Philip S. Yu	俞士綸	For his significant contributions to Data Management
	Dr. Carl K. Chang	張可昭	For his significant contributions to IEEE Computer Society
	Dr. Keith Kwong Hon Wong	黃洸漢	For his devoted service to this Institute
	Dr. Monsong Chen	陳孟松	For his devoted service to this Institute
2022	Dr. Leon O. Chua	蔡少棠	For his contributions to Memristor and other forms of this concept for Neural Network Applications
	Dr. Shih-Fu Chang	張世富	For his contributions to Computer Vision, Machine Learning, and Multimodal Content Analysis
	Mr. C. David Tseng	曾成德	For his contributions to Modern Architecture, Educating, and Mentoring young talents in Urban Planning

Dr. Keith Kwong Hon Wong	黃洸漢	For his devoted service to this Institute
Dr. Monsong Chen	陳孟松	For his devoted service to this Institute
Mr. Cheng-Yi Lin	林政毅	For his devoted service to this Institute

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Hsueh	Pei-Yun	薛 沛 芸
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Huang	Joyce Qi	黃 琦
Huang	Min-Nan	
Huang	Ting-An	黃 定 安
Huang	Tse-Fah	
Huang	Tzuli Joe	黃 自 立
Huang	Y. T.	
Huang	Yun-Wu	黃 允 武
Hwang	Cheng-Min	黃 正 民
Hwang	Yuhmin	黃 育 民
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Kao	Minglai	高 明 來
Kao	WenLing	高 文 琳
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Kuo	W.L.	郭 文 林
Kwei	T.K.	桂 體 剛
Lai	Charlie	
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Lee	[Thomas H.]	李 天 和
Lee	Tien-Pei	李 天 培
Lee	Wei-Kuo	李 維 國
Li	Chou H.	李 周 雄
Li	[Tingye]	厲 鼎 毅
Liao	Mary W.	
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Lin	Cheng-Yi	林 政 毅
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Lin	Shiow-	林 秀 清

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Lin	T. D. Vincent	
Lin	[T. Y.]	林 同 棪
Lin	Wen	林 文
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Liu	[Ming-Hao]	劉 明 灝
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Lu	Guang	陸 廣
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Lu	Kevin	呂 克 文
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Mou	Michael	莫 自 治
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Ng	Maureen	吳 慕 賢
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Pan	[W. Y.]	潘 文 淵
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Rau	Darwen	饒 達 源
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Shen	F.C.	沈 中 的
Shen	[Thomas T.]	沈 鐸
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Shiue	Michael	薛 公 惠
Shu	Chiao-Fe	徐 秋 風
Shu	Suisheng	
Shyu	Jia-Ming	徐 佳 銘
Siew	Ernest L.	蕭 亮 禎
Sih	C.M.	薛 昌 明
Su	Heng	蘇 衡
Su	Shiaw-Der	蘇 孝 德
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2023 CHINESE INSTITUTE OF ENGINEERS – USA
GREATER NEW YORK CHAPTER
美洲中國工程師學會大紐約分會

THE OBJECTIVE AND PURPOSE OF THE ORGANIZATION ARE:
(1) TO ENCOURAGE STUDY AND RESEARCH IN ENGINEERING AND SCIENTIFIC SUBJECT, PRIMARILY AMONG ENIGNEERS AND SCIENTISTS OF CHINESE AMERICANS.
(2) TO RPOMOTE COMMUNICATIONS AMONG ENGINEERS AND SCIENTISTS WHO ARE INTERESTED IN THE WELL-BEING OF THE CHINESE ENGINEERING COMMUNITY IN THE U.S. AND ABROAD.

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ACKNOWLEDGEMENT

美國簽證的種類

非移民類：

1. **B 簽證：** 是提供給短期訪美人士。

2. **E 簽證：** 適用於必須長期待在美國經營或監督商業活動的企業主、經理人或員工。與美國簽有雙邊互惠條約的國家，其國民可申請此簽證進入美國從事貿易或投資。

3. **H-1B 工作簽證：** 提供專業人才在美國居留工作三年，並可以申請延展三年。

4. **L 簽證：** 使跨國公司得以短期外派經理、主管或專業技能員工到美國。該外派人員的配偶與未滿 21 歲的未婚子女也可隨行。

5. **O 簽證：** 適用於在藝術（包括影視）、科學、教育、商業或體育領域具有傑出能力的外國人才。符合條件的外國人持此簽證可在美短期居住與提供服務或勞務。

移民類（綠卡）：

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第一優先類別提供給被認定為「優先工作者」的外國人，免於勞工證的申請過程。第一優先類別可區分為三類：
① EB-1(a)：在藝術、科學、商業、教育或體育方面的傑出人才
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③ EB-1(c)：跨國企業經理與主管

2. 第二優先類別

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3. 第五優先類別

投資移民 。為刺激美國經濟，美國國會於 1990 年通過 EB5 投資移民計畫，以創造就業機會並吸引外來資金投資。只要外國人投資，並且創造 10 個以上的工作機會，通過美國移民局審核後即可取得美國永久居留身份（即綠卡）。

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