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**AI AND MACHINE LEARNING:  
OPPORTUNITIES AND TRENDS**

NTHU-NA FOUNDATION SPOTLIGHT SERIES  
國立清華大學北美基金會焦點校友訪談系列

Moderator  
Yu-Ting Kuo  
郭昱廷, 數學 88  
微軟全球資深副總裁

03/06/2021 SATURDAY @ 8PM EST (美國東岸時間)  
03/07/2021 SUNDAY @ 9AM TST (台灣時間)

## 國立清華大學北美基金會 焦點校友訪談 AI and Machine Learning: Opportunities and Trends

### 時間:

03/06/2021 Saturday @5pm PST (美國西岸時間)

03/06/2021 Saturday @8pm EST (美國東岸時間)

03/07/2021 Sunday @9am TST (台灣時間)

註冊連結: <https://forms.gle/aSncGiuiXGWJ4YzU9>

請提供您的電子郵件地址, 以讓主辦單位可以在報名後送給您 Zoom 的詳細活動通知, 請留意您的電郵信箱或垃圾信箱。

### 摘要:

In the past few years, we have witnessed tremendous progress in the areas of AI such as computer vision, natural language processing and speech, thanks to the innumerable analog data streams captured and digitized by billions of devices, the advancement and availability of GPU and cloud computing resources and the rapid development of machine learning and deep learning techniques, among others.

In this panel we invite several prominent NTHU and NCTU alumni who work on developing some of the cutting-edge AI technologies and applications in top institutions such as Google, IBM, Microsoft, NTHU and UC Merced to share their perspectives on the technological trends, opportunities and challenges facing the industry. Time permitting, they will also share their academic and professional journey from NTHU/NCTU to hold key positions in these top institutions solving some of the most challenging problems in AI and machine learning.

### 與會座談學者專家 (依英文姓氏排列):



**Dr. Pin-Yu Chen 陳品諭 (交大 EECS 09)**

Dr. Pin-Yu Chen is currently a research staff member 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. Chen received his Ph.D. degree in electrical engineering and computer science and M.A.

degree in Statistics from the University of Michigan, Ann Arbor, USA, in 2016. He received his M.S. degree in communication engineering from National Taiwan University, Taiwan, in 2011 and B.S. degree in electrical engineering and computer science (undergraduate honors program) from National Chiao Tung University, Taiwan, in 2009.

Chen's recent research focuses on adversarial machine learning and robustness of neural networks. His long-term research vision is building trustworthy machine learning systems. He has published more than 30 papers related to trustworthy machine learning at major AI and machine learning conferences, given tutorials at CVPR'20, ECCV'20, ICASSP'20, KDD'19, and Big Data'18, and organized several workshops for adversarial machine learning. His research interest also includes graph and network data analytics and their applications to data mining, machine learning, signal processing, and cyber security. He was the recipient of the Chia-Lun Lo Fellowship from the University of Michigan Ann Arbor. He received a NeurIPS 2017 Best Reviewer Award, and was also the recipient of the IEEE GLOBECOM 2010 GOLD Best Paper Award. Chen is currently on the editorial board of PLOS ONE.

At IBM Research, Chen has co-invented more than 20 U.S. patents. In 2020, he received a IBM Research special division award for research related to COVID-19. In 2019, he received two Outstanding Research Accomplishments on research in adversarial robustness and trusted AI, and one Research Accomplishment on research in graph learning and analysis.



**Dr. I-Hsin Chung 鍾一新 (清大 資工 96)**

Dr. I-Hsin Chung received the Ph.D. degree in computer science from the University of Maryland, College Park, in 2004, before joining IBM Research. After completing his

Ph.D., Chung joined IBM Research as a research scientist and worked on performance modeling, tuning and tools. Chung's research is in the system architecture area including data-centric computing and high-performance computing. He is currently leading the efforts to co-design for future data center systems with the strategic application workloads such as cognitive and cloud computing. His experience includes performance analysis and modeling on IBM platforms such as POWER, mainframe Z Systems, and the Blue Gene systems. He has worked in the system software and performance analysis of world-renowned CORAL and Blue Gene series supercomputer designs. He is also an adjunct faculty of Courant Institute at NYU.



**Professor Shang-Hong Lai 賴尚宏 (清大 電機 86)**

Shang-Hong Lai received the B.S. and M.S. degrees in electrical engineering from National Tsing Hua University, Taiwan and the Ph.D. degree in electrical and computer engineering from University of Florida, Gainesville, USA, in 1986, 1988 and 1995, respectively. He joined Siemens Corporate Research in Princeton, New Jersey, USA, as a member of technical staff in 1995. He primarily researched in the medical imaging and industrial vision fields during his work at Siemens (1995-1999). Since 1999, he joined the Department of Computer Science at NTHU, where he has been a professor in the same department. Lai served as the director of the Computer and Communication Center at NTHU during 2011-2015. He then served as the chairman of the Department of Computer Science during 2015-2018. Since the summer of 2018, he has been on leave from NTHU to join Microsoft as a principal researcher and the chief AI scientist in Microsoft AI R&D Center, Taiwan, where he has led a science team focusing on face related research, including face recognition and face anti-spoofing. Lai's research interests are mainly focused on computer vision, image processing, and machine learning. He has authored around 300 papers published in refereed international journals and conferences in these areas. In addition, he has been awarded around 30

patents for his research on computer vision and medical imaging. He has been involved in the organization of a number of international conferences in computer vision and related areas. Lai also served as an associate editor for several international journals in these areas.



**Professor Ming-Hsuan Yang 楊明玄 (清大 動機 91)**

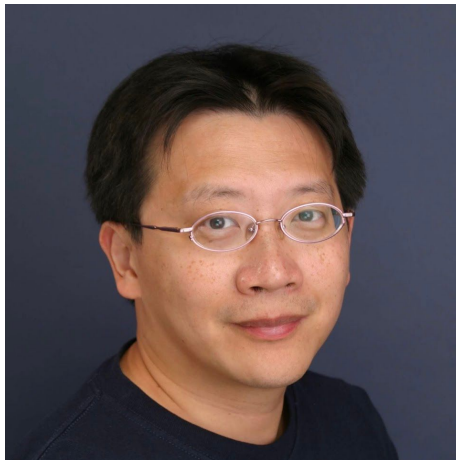
Ming-Hsuan Yang is a Professor in Electrical Engineering and Computer Science at the University of California, Merced and a Senior Staff Research Scientist at Google. Yang received his PhD degree in Computer Science from the University of Illinois at Urbana-Champaign (UIUC) in 2000. Before that, Yang studied Power Mechanical Engineering and Computer Science at the National Tsing-Hua University in 1991; Computer Science and Brain theory at the University of Southern California in 1992; and Artificial Intelligence and Operations Research at the University of Texas at Austin in 1994. Yang has published more than 400 papers in journals and conferences. His papers have been cited more than 70,430 times with the h index of 111. He is one of the highly-cited researchers in computer vision according to Google Scholar and Microsoft Academic.

Yang served as a program co-chair of IEEE Conference on Computer Vision (ICCV) in 2019; program co-chair of Asian Conference on Computer Vision (ACCV) in 2014; and general co-chair of ACCV in 2016. He has served as an area chair for several conferences including IEEE Conference on Computer Vision and Pattern Recognition (CVPR) in 2008, 2009, 2014, 2018, and 2021; IEEE International Conference on Computer Vision in 2011, 2015 and 2017; European Conference on Computer Vision (ECCV) in 2014, 2016, 2018 and 2020; Asian Conference on Computer in 2009, 2010, and 2012; AAAI National Conference on Artificial Intelligence (AAAI) in 2011, 2020 and

2021; International Joint Conference on Artificial Intelligence (IJCAI) in 2019, 2020 and 2021. Yang has served as an associate editor of the IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI) from 2007 to 2011. Currently, Yang is an associate editor of the International Journal of Computer Vision (IJCV), Computer Vision and Image Understanding (CVIU), Image and Vision Computing (IVC) and Journal of Artificial Intelligence (JAIR).

Yang received the Best Paper Honorable Mention in CVPR 2018; Best Student Paper Honorable Mention in ACCV 2018; Best Paper Honorable Mention in ACM Symposium on User Interface and Software Technology (UIST) 2017; Best Paper finalist in CVPR 2016; and Best Paper in IEEE International Conference on Internet of Things (iThings) 2014.

Yang received the Google Faculty Award in 2009; UC Merced Distinguished Early Career Research Award; UC Merced Senate Award for Distinguished Research in 2015; and Nvidia Pioneer Research Award 2017 and 2018. He also received the Faculty Early Career Development (CAREER) Award from the National Science Foundation (NSF) in 2012. Yang is a highly cited researcher by Clarivate Analytics (formerly Thomson Reuters) in 2018-2020. Yang is an IEEE Fellow.



**主持人: Mr. Yu-Ting Kuo 郭昱廷 (清大 數學 88)**

Yu-Ting Kuo is a Corporate Vice President in the Technology and Research Group at Microsoft. In this role, Kuo works on cross-company technical and strategic initiatives.



His current focus areas are environment-aware machine learning and AI platform scaling.

Previously, Kuo founded and oversaw Microsoft's Computer Vision Engineering Group, where he managed a global engineering and science organization that developed state of the art technologies in the areas of computer vision and mixed reality. Kuo also helped found Microsoft's AI R&D Center in Taipei and Mixed Reality and AI Lab in Zürich where the company works on advanced machine learning capabilities.

In 2016, Kuo led Microsoft's acquisition of London-based SwiftKey, the top AI-powered mobile keyboard, and served as its post-acquisition manager. In 2015, Kuo founded the project initiative that would eventually become Microsoft's Azure Cognitive Services. Azure Cognitive Services was the first publicly available suite of AI services for developers, helping democratize AI technology for the industry and reaching over one million developer customers. In 2014, Kuo served as Technical Advisor to the Executive Vice President of Microsoft's AI and Research Group, where he led technical strategy, planning, incubation, and strategic prototyping.

Kuo is the recipient of the Inaugural Chinese Institute of Engineers/USA-SEA Asian American Luminary Award in Science and Engineering Innovation in 2018 for his pioneering work in Cloud AI services. He also holds a number of US and international patents on Internet search and AI technologies.

Kuo joined Microsoft from McKinsey & Company in 1996 as a technical evangelist. He is an alumnus of National Tsing Hua University, Stanford University and the Massachusetts Institute of Technology. Kuo was elected a distinguished alumnus of the College of Science, National Tsing Hua University in 2020.

Outside of work, Kuo serves on the alumni board of the MIT Sloan School of Management and has endowed a graduate fellowship at the MIT Sloan School of Management to support underrepresented students in STEM management careers. He is an avid collector of Star Wars Lego sets and mechanical keyboards. Kuo and his family live in the Seattle area.