沈祖堯教授

- 新加坡南洋理工大學高級副校長(健康與生命科學)
- 李光前醫學院院長
- 傑出大學講座教授

講者簡介

沈祖堯教授於一九八三年獲香港大學內外全科醫學士學位,隨後獲加拿大卡爾加里大學頒授博士學位(生命科學),以及獲香港中文大學頒授醫學博士學位。沈教授為中國工程院院士、英國(包括愛丁堡、格拉斯哥及倫敦)皇家內科醫學院院士、澳洲皇家內科醫學院院士、美國腸胃病學學院院士、美國腸胃學會院士、日本消化器內視鏡學會院士、新加坡醫學專科學院院士、香港內科醫學院院士、香港醫學專科學院院士,並為國際歐亞科學院院士以及港科院創院院士。2010 年至 2017 年期間為香港中文大學第七任校長。

沈教授為腸胃研究權威,研究範圍包括腸胃出血、幽門螺旋菌、消化性潰瘍、肝炎、大腸癌以及與消化系統相關的癌症。 他率領的研究團隊證實了幽門螺旋菌與胃潰瘍的關係,並最先證明只需為期一周的抗生素療程,即可消除胃內的幽門螺旋菌感染,治癒胃潰瘍,大幅減低潰瘍復發的危險。 同時,沈教授及其研究隊伍率先以內視鏡治療潰瘍出血,減低手術的需要。有關研究成果,為全球腸胃科的治療潰瘍方法帶來深遠影響。近年,沈教授研究範疇拓展至腸道微生態及人工智能在臨床醫學之應用。

作為領導全球腸胃及肝科研究的先驅,沈教授帶領個亞太國家的專家,自 2004 年起展開大腸癌篩查研究,擬定清晰普查指引,在亞太地區提倡大腸癌篩查。 為表彰他對篩查及防預癌症的貢獻,美國防癌基金會在二零零八年頒授桂冠獎予沈教授。 2009 年,他憑其胃潰瘍出血治療的優秀研究,獲頒亞太地區腸胃科最高獎項的馬歇爾及沃倫講座獎。 同年亦獲德國腸胃病學協會內視鏡獎。 2013 年獲世界胃腸病學組織及基金授予世界胃腸病學組織專家榮譽。

沈教授著作甚豐，曾在頂尖國際醫學及科學期刊發表超過一千篇論文。 他著作及編輯的書籍約三十本，部份篇章載於主要教科書內，包括 Oxford Textbook of Medicine （第五版）。 自 2018 年，沈教授連續六年榮獲為科睿唯安《高被引學者》。

2003 年非典型肺炎疫症爆發期間，沈教授積極進行抗疫工作，被《時代雜誌》譽為年度「亞洲英雄」。 同年，他並獲香港傳媒頒發抗 SARS 傑出獎（醫護科技人員組）及 2003 年傑出領袖獎（小區及公共事務組），表揚他對香港社會的重大貢獻。

Professor Joseph J Y Sung

- Dean, Lee Kong Chian School of Medicine Nanyang Technological University, Singapore
- Senior Vice President (Health & Life Sciences)
- Distinguished University Professor

Biography

Professor Sung received his medical degree (MBBS) from The University of Hong Kong, and conferred PhD in biomedical sciences by the University of Calgary and MD by The Chinese University of Hong Kong. He holds fellowships from the Royal Colleges of Physicians of Edinburgh, Glasgow, London, and Australia, the American College of Gastroenterology, the American Gastroenterological Association, the Hong Kong College of Physicians, the Hong Kong Academy of Medicine, Academy of Sciences of Hong Kong (ASHK), Japan Gastroenterological Endoscopy Society and Academy of Medicine, Singapore. He is an Academician of the Chinese Academy of Engineering of the People's Republic of China and Academician of the International Eurasian Academy of Sciences. He served as the Vice-Chancellor and President of the Chinese University of Hong Kong (2010 – 2017).

Professor Sung's research interests include intestinal bleeding, Helicobacter Pylori, peptic ulcer, hepatitis B, colorectal cancer, and other cancers related to the digestive system. Professor Sung and his team proved the relationship between H. Pylori and peptic ulcer diseases. They were first in demonstrating that a course of antibiotics lasting a week can cure H. Pylori infection and successfully treat peptic ulcers and minimize their relapse. At the same time, he and his research team pioneered the use of endoscopic treatment for ulcer bleeding to reduce the need for operative surgery. These research results have a major impact on and have changed the practice of gastroenterology worldwide. In recent years, his research portfolio has extended into studies of gut microbiome and digestive diseases. He is also exploring the use of artificial intelligence in clinical medicine.

Professor Sung is a renowned researcher in gastroenterology and hepatology. He led a group of experts from 15 Asia-Pacific countries to launch colorectal cancer screening research in 2004, and has laid down clear guidelines and promoted colorectal screenings in the region. Because of his work in cancer screening and prevention, Professor Sung was honoured by the Prevent Cancer Foundation of the United States with the Laurel Award in 2008. In 2009, his seminal lectures on peptic ulcer bleeding won him the Marshall and Warren Lecture Award. In the same year, he was also awarded the Endoscopy Award of the German Society of Gastroenterology. In 2013, he received the Master of the World Gastroenterology Organization (WGO) Award from the World Gastroenterology Organization & WGO Foundation.

In 2003, Professor Sung led his medical team to fight against the Severe Acute Respiratory Syndrome (SARS) and was named “Asian Hero” by the Time Magazine in recognition of his outstanding contributions. Underscoring his significant services to the Hong Kong community, Professor Sung was awarded, among others, the Distinguished Award for Scientist and Medical Professional in the Fighting Against SARS (Medical Technology Personnel Category) and the Leader of the Year 2003 (Community and Public Affairs Category) by the media in Hong Kong.

He has published over 1000 full scientific articles in leading medical and scientific journals. He was listed as “Highly Cited Researchers”, released by the Clarivate Analytics, for the years 2018 to 2023. He has edited and authored over 30 books, as well as many chapters in major textbooks including the Oxford Textbook of Medicine (5th Ed.), Sleisenger & Fordtran's Gastrointestinal and Liver Disease (7th &8th Ed) and Yamada’s Textbook of Gastroenterology (4th Ed).

Professor Sung is currently Distinguished University Professor, Senior Vice President (Health & Life Sciences) and Dean, Lee Kong Chian School of Medicine at Nanyang Technological University, Singapore.

Title and abstract

Artificial Intelligence and the Future of Medicine

AI has enormous potential for strengthening the delivery of heath protection, disease prevention, healthcare resource allocation, and management of clinical conditions. It has been demonstrated in improving diagnosis, enhancing health research and drug development, and assisting with the deployment of different public health interventions.

Before AI can be widely applied to our daily clinical practice and revolutionize population health policy of our society, the following issues need to be address.

1. Data collection and use
2. Data security and trust
3. Decisions and autonomy
4. Responsibility and liability
5. Affordability and cost
6. Healthcare equity

An interdisciplinary panel should be set up with clinical practitioner, AI engineer, ethicist, legal experts, social scientist, economist and policy makers. Guideline should be developed, legal framework be built, regulatory standards be established and communication channels with healthcare providers and healthcare receivers be set up.

“Our future is a race between the growing power of technology and the wisdom with which we use it.” Stephen Hawking. As healthcare workers are apprehensive whether AI-Medicine will replace them from the job, Charles Darwin reminded us “It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change.”

蒙美玲教授

- 香港中文大學禤永明系統工程與工程管理學首席教授
- 何鴻燊海量數據決策分析研究中心主任

講者簡介

蒙美玲教授是香港中文大學禤永明系統工程與工程管理學首席教授。她主力進行關於人工智能語音和語言處理方面的研究。2020 年，她協助建立由香港中文大學牽頭設於香港科學園的人工智能創新中心－博智感知交互研究中心有限公司，並擔任中心總監。2019 年，她獲得香港特別行政區政府研究資助局頒發的第一個人工智能主題研究計劃項目，以支持她的跨學科研究團隊開發人工智能語言技術，用於進行神經認知障礙症（俗稱老年痴呆症）的篩查和診斷。 自 2019 年，蒙教授肩負為香港中文大學及香港賽馬會「智」為未來計劃的計劃副負責人及課程發展組主領，開發了香港首套切合初中程度的人工智能教育課程，該課程已被香港政府教育局採用。

蒙教授在麻省理工學院獲得學士，碩士及博士學位。她在 2005 年創辦微軟-香港中文大學利群計算及界面科技聯合實驗室。該實驗室自 2008 年起被升格為中國教育部（MoE）重點實驗室。蒙教授於 2006 至 2010 年擔任工程學院副院長（研究）。2006 年，她創立了清華大學-香港中文大學媒體科學、技術與系統聯合研究中心。2007 年，她助力中大及中國科學院深圳先進集成技術研究所聯合創辦環境智能與多模態系統實驗室。2010 年，她協助（代表香港中文大學）成立清華大學-麻省理工學院-香港中文大學理論計算機科學研究中心。在 2012 至 2013 年，她作為香港中文大學（深圳）學術規劃小組委員會的成員率先為課程設計做出早期貢獻，此後一直擔任其兼職教授。2013 年，她協助成立中大何鴻燊海量數據決策分析研究中心，並擔任主任。於 2012 年，蒙教授成為工程學院的首位女系主任，並一直擔任此職位至 2018 年。

蒙教授曾多次在大型會議上發表主題演講，包括擔任全國人機語音通訊學術會議的主題演講，國際頂級會議 COLING 2022 的 Grand Challenge 演講嘉賓、2021 年 IEEE ICASSP 的大會報告、2021 年 ACL 的主題報告和 2018 年 INTERSPEECH 的大會報告。歷年來，蒙教授和她的研究團隊獲獎甚多，其中近期的的獎項包括 INTERSPEECH 2023 最佳學生論文獎，在國際比賽 DiaDoc@ACL 2022 奪魁、JESSICA 雜誌 Outstanding Women Award、香港 SciTech Challenge 2021 公開組冠軍、2019 年 IEEE SPS Leo L. Beranek 功勳服務獎、2016 年微軟研究院傑出合作者獎（全球 32 位學者之一）、2016 年 IBM 傑出學者獎、2015 年 ISCA 傑出講師，以及多個傑出論文獎等。蒙教授早年曾獲得香港中文

大學的傑出教學獎、青年研究獎和服務獎。蒙教授曾被選為 IEEE SPS Transaction on Audio，Speech and Language Processing（被譽為是該領域最負盛名的期刊）的總主編。蒙教授同時亦是 IEEE、ISCA、HKIE 和 HKCS 的委員會成員。

蒙教授多年來亦擔任過不同的公職，最近更出任由香港特別行政區政府財政司司長主持的數字化經濟發展委員會的人才發展工作小組召集人。

Professor Helen Meng

- Patrick Huen Wing Ming Chair Professor of Systems Engineering and Engineering Management (SEEM) at The Chinese University of Hong Kong (CUHK)

- Director of Stanley Ho Big Data Decision Analytics Research Center, Chinese University of Hong Kong, Hong Kong

Biography

Professor Helen Meng is Patrick Huen Wing Ming Chair Professor of Systems Engineering and Engineering Management (SEEM) at The Chinese University of Hong Kong (CUHK). Her research interests lie in AI-enabled speech and language technologies. She serves as Founding Director of the Centre for Perceptual and Interactive Intelligence (CPII) since 2020, which is the CUHK-led InnoCentre on Artificial Intelligence (AI) located in the Hong Kong Science and Technology Parks Ltd. In 2019, she was awarded the first Hong Kong SAR Government Research Grant Council's Theme-based Research Grant in the field of AI, which supports her interdisciplinary team to develop AI-enabled spoken language technologies to screen and diagnose neurocognitive disorder (a.k.a. dementia). Since 2019, Helen has been Co-Principal Investigator and Chair of Curriculum Development of the CUHK-JC AI4Future Project, and developed the first comprehensive pre-tertiary AI education curriculum in Hong Kong, adopted by the Government's Education Bureau.

Professor Meng received all her degrees from MIT. She founded the Microsoft-CUHK Joint Laboratory for Human-Centric Computing and Interface Technologies in 2005, which is recognized as a Ministry of Education (MoE) of China Key Laboratory since 2008. Professor Meng has served as Associate Dean (Research) of the Faculty of Engineering between 2006 and 2010. In 2006, she founded the Tsinghua-CUHK Joint Research Center for Media Sciences, Technologies and Systems. In 2007, she helped establish the Laboratory for Ambient Intelligence and Multimodal Systems in the Chinese Academy of Sciences Shenzhen Institute of Advanced Integration Technology, through its joint initiative with CUHK. In 2010, she facilitated the establishment (from

the CUHK side) the Tsinghua-MIT-CUHK Joint Research Centre for Theoretical Computer Science. In 2012/2013, she served as member of CUHK Shenzhen Academic Planning Subcommittee and became an early contributor towards curriculum design for CUHK(Shenzhen), and has been their Adjunct Professor ever since.

In 2013, she helped establish the CUHK Stanley Ho Big Data Decision Analytics Research Centre and serves as its Director. In 2012, Helen was appointed to be the first female Chairman of her department, and also of the Faculty, and served until 2018.

She has delivered numerous plenary, keynote and invited talks at flagship conferences, including Keynote Speaker of the National Conference on Man Machine Speech Communication 2023, Grand Challenge Speaker of the International Conference on Computational Linguistics 2022, Plenary Speaker of IEEE ICASSP 2021, Keynote Speaker of ACL 2021 and Plenary Speaker of INTERSPEECH 2018. Helen and her research team have received various awards, and recent ones include the Best Student Paper Award of INTERSPEECH 2023, First Prize of the international DialDoc@ACL 2022 Challenge, Outstanding Women Award of Jessica Magazine, Hong Kong's SciTech Challenge 2021 Open Category Championship, 2019 IEEE SPS Leo Beranek Meritorious Service Award for service and leadership, 2016 Microsoft Research Outstanding Collaborator Award (one of 32 academics worldwide), 2016 IBM Faculty Award, 2015 ISCA Distinguished Lecturer, various Best Paper Awards, etc. Helen was also the recipient of CUHK's Exemplary Teaching Award, Young Researcher Award and Service Award in previous years. Helen has also served as the elected Editor-in-Chief of the IEEE Transactions on Audio, Speech and Language Processing, often regarded as the top journal in her field. Helen is a Fellow of the IEEE, ISCA, HKIE and HKCS.

Helen has also served in various government appointments, with the most recent being appointed member of the HKSAR Government's Digital Economy Development Committee, chaired by the Financial Secretary, where she services as the Convenor of the Talent Cultivation Sub-group.

Title and abstract

AI and Cognitive Health

With the global population ageing rapidly, a key health concern lies in Neurocognitive Disorders (NCD), also known as dementia -- a common form being Alzheimer's Disease (AD).

NCDs are particularly prominent in older adults, which has an insidious onset followed by gradual, irreversible deterioration in cognitive domains (memory, communication, etc.. Thus the screening NCD is crucial for timely intervention to slow down disease progression. We will present our work in the use of spoken language for assessing cognitive health, including a carefully designed speech data collection protocol that has contextual relevance to the linguistic environment in Hong Kong, Macao and the Greater Bay Area, the development of AI-enabled speech and language analytics approaches, and the use of different acoustic and linguistic features for the AD detection. Experimental results demonstrate the feasibility of automating cognitive health monitoring with the use of speech and language technologies, which offers the advantages of accessibility, non-invasiveness and affordability. This work is funded by the HKSAR Government's Theme-based Research Scheme.

高浩醫生

- 香港中文大學醫學院內科及藥物治療學系的副教授
- 香港中文大學張金菱治療柏金遜綜合症研究中心副主任
- 劉達泉華人腦衰退疾病科研中心副主任
- 李嘉誠健康科學研究所及蔡永業腦神經科學研究所首席研究員

講者簡介

高浩領導的團隊擁有生物學、化學和工程方面的專業知識，當前的研究工作聚焦於三個緊密相關的主題：(1) 神經退行性疾病中的神經血管功能障礙及其治療目標；(2) 調節感覺運動行為的神經迴路及其在衰老中的功能障礙；(3) 神經成像工具和方法開發。

題目和摘要

以人工智能分析視網膜圖像偵測阿茲海默症

隨著人口老化，阿茲海默症的盛行正在迅速成為全球的巨大挑戰。面對這一挑戰，我們迫切需要開發能夠廣泛應用於篩查和診斷的工具，以補充認知功能測試。視網膜作為唯一可通過光學方法直接觀察的神經組織，為我們提供了一種通過非侵入性成像技術來評估神經病理學變化的新途徑。在今天的演講中，我將代表莫仲棠教授和張艷蕾教授領導的研究團隊，向大家介紹我們使用人工智能強化的視網膜成像分析作為對阿茲海默症初步篩查的有效工具。我也會講述這項技術如何融入阿茲海默病的診斷流程中，以及它在人群篩檢和臨床試驗參與者招募方面的應用前景。