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**\* The Program is used for CECNet 2025 & MLIS 2025 Academic Exchange Only**

# Part I Conference Schedule Summary

## Monday, November 24, 2025 / UTC+8, Hong Kong Time

| Time        | Schedule         | Location/Link                                                                                                                     |
|-------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 15:00-17:00 | MS Teams Testing | <a href="http://www.academicconf.com/teamslink?confname=cecnet2025">http://www.academicconf.com/teamslink?confname=cecnet2025</a> |

## Tuesday, November 25, 2025 / UTC+8, Hong Kong Time

Location: VIP Room I-II, 4th Floor, Park Hotel Hong Kong

MS Teams Link: <http://www.academicconf.com/teamslink?confname=cecnet2025>

|             |                                                                                                                                                                                                                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 07:30-09:00 | <b>Onsite Registration</b><br>The onsite registration desk is set at the entrance of VIP Room I-II, 4th Floor, Park Hotel Hong Kong.<br><b>Notes: please show your paper ID to the Conference Secretary to get the conference materials and complete the onsite registration.</b> |
| 09:00-09:05 | <b>Welcome Speech</b><br><i>Assoc. Prof. Ka-Chun Wong, Department of Computer Science, City University of Hong Kong, China</i>                                                                                                                                                    |
| 09:05-09:35 | <b>Keynote Speech 1: Advances in Quantum Dots for Lasers and Quantum Technologies</b><br><i>Prof. Yasuhiko Arakawa, Institute for Nano Quantum Information Electronics, The University of Tokyo, Japan</i>                                                                        |
| 09:35-10:05 | <b>Keynote Speech 2: Pattern Recognition, AI, and Their Applications</b><br><i>Prof. Ching Yee Suen, Computer Science and Software Engineering, Concordia University, Canada</i>                                                                                                  |
| 10:05-10:35 | <b>Keynote Speech 3: Machine Learning for Communication Networks</b><br><i>Prof. Kin K. Leung, EEE and Computing Department, Imperial College, UK</i>                                                                                                                             |
| 10:35-11:00 | <b>Group Photo &amp; TEA BREAK</b>                                                                                                                                                                                                                                                |
| 11:00-11:30 | <b>Keynote Speech 4: Towards Intelligent Framework for Code Generation at Modern Distributed Architectures</b><br><i>Prof. Sergei Gorlatch, Computer Science, University of Muenster, Germany</i>                                                                                 |
| 11:30-12:00 | <b>Keynote Speech 5: AI for Science: Molecular Biology and Medicine</b><br><i>Assoc. Prof. Ka-Chun Wong, Department of Computer Science, City University of Hong Kong, China</i>                                                                                                  |
| 12:00-12:30 | <b>Keynote Speech 6: Tuning-free Matrix and Tensor Factorizations in Machine Learning</b><br><i>Assoc. Prof. Yik-Chung Wu, Department of Electrical and Electronic Engineering, The University of Hong Kong, China</i>                                                            |

|             |                                                                                   |
|-------------|-----------------------------------------------------------------------------------|
| 12:30-13:30 | <b>Western Lunch Buffet</b><br><b>Park Café, 4th Floor, Park Hotel Hong Kong</b>  |
| 14:00-17:05 | <b>Oral Session 1: Electronic Devices and Communication Systems</b>               |
| 18:30-19:30 | <b>Western Dinner Buffet</b><br><b>Park Café, 4th Floor, Park Hotel Hong Kong</b> |

**Wednesday, November 26, 2025 / UTC+8, Hong Kong Time**

**Location: VIP Room I-II, 4th Floor, Park Hotel Hong Kong**

**MS Teams Link: <http://www.academicconf.com/teamslink?confname=cecnet2025>**

|             |                                                                                  |
|-------------|----------------------------------------------------------------------------------|
| 09:00-12:00 | <b>Oral Session 2: Intelligent Systems and Industry Applications</b>             |
| 12:30-13:30 | <b>Western Lunch Buffet</b><br><b>Park Café, 4th Floor, Park Hotel Hong Kong</b> |
| 14:00-17:00 | <b>Oral Session 3: Artificial Intelligence Algorithms and Models</b>             |

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## Part II Keynote Speeches

### Keynote Speech 1: Advances in Quantum Dots for Lasers and Quantum Technologies



*Prof. Yasuhiko Arakawa*

*Institute for Nano Quantum Information Electronics, The University of Tokyo, Japan*

**Biography:** Yasuhiko Arakawa received his Ph.D. from the University of Tokyo in 1980 and has served as Professor since 1993, currently holding the position of Specially Appointed Professor at the Institute for Nano Quantum Information Electronics, The University of Tokyo and Professor Emeritus, The University of Tokyo. He proposed the concept of the quantum dot in 1981-2 and pioneered quantum dot lasers, achieving the first experimental demonstration of their temperature insensitivity in 2004. His internationally recognized contributions include advances in quantum photonic devices such as single quantum dot lasers, single-photon sources, and exciton–photon polaritons. He also serves as Technical Advisor to QD Laser, Inc., driving new applications and broader deployment of quantum dot technologies. He is also a foreign member of US National Academy of Engineering.

**Abstract:** In 1981, in parallel with reports by Soviet researchers on the discovery of nanoparticles/colloidal quantum dots (QDs), we proposed in Japan the concept of three-dimensionally quantum-confined semiconductor heterostructures (i.e., QDs). This concept, conceived as an extension of semiconductor nanophysics that had evolved from semiconductor superlattices, was accompanied by our theoretical prediction of the temperature insensitivity of the threshold current, thereby pointing to their potential application to lasers. Over the following decades, QDs have become firmly established as fundamental nanostructures in both photonics and electronics. Among their many applications, QD lasers represent the first practical quantum devices to fully harness the discrete nature of electronic energy states. Today, QDs extend their impact beyond conventional optoelectronics, contributing to the development of frontier quantum technologies such as quantum computing and quantum communication. In this presentation, we review recent advances in QD lasers as indispensable light sources for silicon photonics and highlight realizing high-quality QD-based single-photon sources for quantum-integrated photonic systems.

## Keynote Speech 2: Pattern Recognition, AI, and Their Applications



*Prof. Ching Yee Suen*

*Computer Science and Software Engineering, Concordia University, Canada*

**Biography:** Prof. Suen is the Honorary Chair of AI and Pattern Recognition of Concordia University in Montreal, Canada. He is also the Founder and Co-Director of the world-renowned Centre for Pattern Recognition and Machine Intelligence (CENPARMI). He received an M.Sc. degree from the University of Hong Kong and a Ph.D. from the University of British Columbia. A Principal Investigator or Consultant of 30 industrial projects, Dr. Suen has published 8 conference proceedings, 16 books and more than 630 papers. Dr. Suen is the recipient of the IAPR 2020 King-Sun Fu Prize (top honour in the field of Pattern Recognition given to only one person every two years) for "Pioneering research and exceptional contributions to handwriting recognition" leading to the modern way of writing messages with a finger on the surface of cell phones. As a former Editor-in-Chief of the Pattern Recognition Journal for ten years, he received the Elsevier Award of Excellence (2016), Gold Medal from the University of Bari (Italy 2012), CIPPR and ICDAR Awards (2005), the very prestigious ITAC/NSERC national award of \$50,000 (1992, together with Prof. G. Hinton of Toronto), and numerous others. Prof. Suen is not only the founder of three international conferences: ICDAR, IWFHR/ICFHR, and ICPRAI, but is also the General Chair of many international conferences around the world including ICPR, ICDAR, ICFHR, ICPRAI, ICCPOL, and Honorary Chair of numerous others. He has supervised 120 doctoral and master students to completion, and guided/hosted 100 long-term visiting scientists and professors. Currently, he is the Emeritus Editor-in-Chief of the journal of Pattern Recognition, an Adviser or Associate Editor of 5 other journals, and Editor of a new book series on Language Processing, Pattern Recognition, and Intelligent Systems. For details, click <https://www.concordia.ca/faculty/ching-yee-suen.html>

**Abstract:** This talk is about (a) Pattern Recognition, the backbone of Artificial Intelligence, ways of recognizing different types of patterns and visible objects using image processing and machine learning methodologies, and (b) AI - Artificial Intelligence, a bit of history, theory, and various applications. We also present the use of ViT, GPT, and deep learning techniques to recognize handwriting, to measure facial beauty, and to detect fake coins automatically. This system consists of feature measurement, 3D analysis, fuzzy set analysis, advanced PR, AI and ML techniques. For validation, many real-world samples have been tested, and a near 100% accuracy has been achieved. Numerous examples will be demonstrated during this talk.

## Keynote Speech 3: Machine Learning for Communication Networks



*Prof. Kin K. Leung*

*EEE and Computing Department, Imperial College, UK*

**Biography:** Kin K. Leung received his B.S. degree from the Chinese University of Hong Kong, and the M.S. and Ph.D. degrees from University of California, Los Angeles. He worked at AT&T Bell Labs and its successor companies in New Jersey from 1986 to 2004. Since then, he has been the Tanaka Chair Professor at Imperial College in London. He was the Head of Communications and Signal Processing Group from 2019 to 2024 and now serves as Co-Director of the School of Convergence Science in Space, Security and Telecommunications at Imperial. His current research focuses on optimization and machine learning for design and control of large-scale communications, computer and quantum networks. He also works on multi-antenna and cross-layer designs for wireless networks. He is a Fellow of the Royal Academy of Engineering, IEEE Fellow, IET Fellow, and member of Academia Europaea. He received the Distinguished Member of Technical Staff Award from AT&T Bell Labs (1994) and the Royal Society Wolfson Research Merits Award (2004-09). Jointly with his collaborators, he received the IEEE Communications Society (ComSoc) Leonard G. Abraham Prize (2021), the IEEE ComSoc Best Survey Paper Award (2022), the U.S.–UK Science and Technology Stocktake Award (2021), the Lanchester Prize Honorable Mention Award (1997), and several best conference paper awards. He chaired the IEEE Fellow Evaluation Committee for ComSoc (2012-15) and served as the General Chair of the IEEE INFOCOM 2025. He has served as an editor for 10 IEEE and ACM journals and chaired the Steering Committee for the IEEE Transactions on Mobile Computing. Currently, he is an editor for the ACM Computing Survey and International Journal of Sensor Networks.

**Abstract:** Efficient allocation of limited resources to competing demands is a crucial issue in the design and management of communication networks. In this presentation, the speaker will first introduce a new reinforcement-learning technique for achieving optimal resource allocation in networks with periodic traffic patterns. The effectiveness of this method will be demonstrated through numerical examples. In addition, the speaker will discuss new approaches for supporting federated learning (FL) and enhancing the learning process through resource adaptation, model pruning, and split learning to address resource constraints. FL involves learning model parameters from distributed data and adapting the learning according to the limited availability of communication, CPU, and GPU resources. The key idea of model pruning is to reduce computation and communication burden by removing unimportant model parameters, while split learning divides the model and learning tasks between the server and user sides. Experimental results demonstrate that these approaches perform close to the optimum or offer significant performance improvements when compared to other methods.

## Keynote Speech 4: Towards Intelligent Framework for Code Generation at Modern Distributed Architectures



*Prof. Sergei Gorlatch*

*Computer Science, University of Muenster, Germany*

**Biography:** Sergei Gorlatch is Full Professor of Computer Science at the University of Muenster (Germany) since 2003. Earlier he was Associate Professor at the Technical University of Berlin, Assistant Professor at the University of Passau, and Humboldt Research Fellow at the Technical University of Munich, all in Germany. Prof. Gorlatch has more than 200 peer-reviewed publications in renowned international books, journals and conferences. He was principal investigator in several international research and development projects in the field of software for parallel, distributed, Grid and Cloud systems, machine learning, and networking, funded by the European Community and by German national bodies.

**Abstract:** Modern and future applications increasingly work on distributed and networked architectures, including Clouds and Software-Defined Networks (SDN). They connect a potentially very high number of users who interact with the application and with other users in real time, i.e., a response to a user's action happens virtually immediately. Popular examples are massively-multiplayer online games, high-performance simulations, and applications for e-learning and e-training. They require very high level of user interactivity with hard Quality of Service (QoS) requirements on real-time performance and scalability. One of the main challenges is the complex and often cumbersome development process of highly parallel, real-time software for such applications. We develop a novel, intelligent interface for developing and running applications: our Real-Time Framework (RTF) greatly simplifies the development of scalable distributed and networked applications. The developer specifies at the high level of abstraction how the application should be distributed and parallelized, and the framework automatically generates low-level code which can be directly executed on the target distributed architecture with high performance. We finally address the problem of ensuring high QoS of networked applications by automatically translating from application-level metrics of QoS into network-level metrics that can be implemented by the underlying network structure using the advantages of SDN.

## Keynote Speech 5: AI for Science: Molecular Biology and Medicine



*Assoc. Prof. Ka-Chun Wong*

*Department of Computer Science, City University of Hong Kong, China*

**Biography:** Ka-Chun Wong was born and raised in Hong Kong where he was lucky enough to be immersed in a multi-cultural environment. He received his B.Eng. in Computer Engineering from United College, The Chinese University of Hong Kong in 2008. He has also obtained his M.Phil. degree in the Department of Computer Science and Engineering at the same university in 2010. From 2011 to 2014, he has spent 3.5 years to finish his PhD degree in the Department of Computer Science at the University of Toronto. Right after his PhD study, Ka-Chun has started his research lab in the Department of Computer Science, City University of Hong Kong. His research group works have been published on Nature Communications, Advanced Science, Nucleic Acids Research, iScience (Cell Press), Briefings in Bioinformatics, Bioinformatics, IEEE/ACM Transactions, NeurIPs, AAAI, IJCAI, ICONIP, and others. He is on the editorial boards and committees of international journals and conferences. Multiple keynote and invited speeches have been delivered worldwide. He was an ACM Distinguished Speaker from 2019 to 2022. He was ranked among the Stanford's top 2% most highly cited scientists for the recent three years (versions 5,6,7).

**Abstract:** In recent years, the integration of Artificial Intelligence (AI) in scientific research has revolutionized the field of molecular biology and medicine. This keynote speech aims to explore three significant aspects of computational intelligence in molecular biology and medicine. In particular, we will go from basic research to clinical research: bioinformatics, medical informatics, and clinical solutions. By leveraging computational intelligence and generative AI, we have enabled breakthroughs in DNA motif analysis, cancer detection, gene editing, and small-molecule drug discovery.

### 1. Bioinformatics: DNA motifs and gene regulation

Bioinformatics has been greatly enhanced by AI techniques, particularly in the analysis of DNA motifs and gene regulation. Pattern recognition algorithms have proven instrumental in identifying and understanding the intricate patterns within DNA sequences. These algorithms aid in deciphering gene regulatory elements, enabling researchers to unravel the complexity of genetic networks and their impact on cellular processes. Through AI-powered bioinformatics, we have gained deeper insights into the fundamental mechanisms governing gene expression and regulation.

### 2. Medical informatics: Cancer detection and localization

AI has played a pivotal role in medical informatics, particularly in the realm of cancer detection and localization. Machine learning algorithms have demonstrated remarkable accuracy in analyzing complex medical data, such as radiological images and genomic profiles. By training models on vast datasets, AI can identify subtle patterns indicative of cancerous cells, assisting in early detection and precise localization of tumors. This breakthrough empowers clinicians to make informed decisions, leading to improved patient outcomes and personalized treatment strategies.

### 3. Clinical solutions: gene editing and small-molecule drug discovery

AI has propelled clinical solutions to new heights, particularly in gene editing and small-molecule drug discovery. With the aid of diffusion models, researchers can simulate and predict the behavior of genetic modifications and their impact on cellular functions. This enables precise gene editing, offering potential therapeutic interventions for genetic disorders. Additionally, AI-driven drug discovery and docking techniques have accelerated the identification of small-molecule compounds with the potential to target specific disease pathways. By leveraging AI in clinical settings, we are witnessing a paradigm shift towards personalized medicine and tailored treatments.

## Keynote Speech 6: Tuning-free Matrix and Tensor Factorizations in Machine Learning



*Assoc. Prof. Yik-Chung Wu*

*Department of Electrical and Electronic Engineering, The University of Hong Kong, China*

**Biography:** Yik-Chung Wu received the B.Eng. (EEE) degree in 1998 and the M.Phil. degree in 2001 from the University of Hong Kong (HKU). He received the Croucher Foundation scholarship in 2002 to study Ph.D. degree at Texas A&M University, College Station, and graduated in 2005. From August 2005 to August 2006, he was with the Thomson Corporate Research, Princeton, NJ, as a Member of Technical Staff. Since September 2006, he has been with HKU, currently as an Associate Professor. He was a visiting scholar at Princeton University, in summers of 2015 and 2017. His research interests are in general areas of machine learning and signal processing, and in particular Bayesian inference, distributed algorithms, and large-scale optimization. Dr. Wu served as an Editor for IEEE Communications Letters, and IEEE Transactions on Communications. He is currently a Senior Area Editor for IEEE Transactions on Signal Processing, an Associate Editor for IEEE Wireless Communications Letters, and an Editor for Journal of Communications and Networks. He received four best paper awards in international conferences, with the most recent one from IEEE International Conference on Communications (ICC) 2020. He was a symposium chair for many international conferences, including IEEE International Conference on Communications (ICC) 2023 and IEEE Globecom 2025. He was elected the Best Editor of the year 2023 in IEEE Wireless Communications Letters. He is an elected member of IEEE signal processing society SPCOM Technical Committee (2025-2026), and an IEEE Distinguished Lecturer (Vehicular Technology Society 2025 class).

**Abstract:** Matrix and Tensor factorizations are important data analytic tools in many applications, such as recommendation systems, image completion, social network data mining, wireless communications, etc. Traditionally, matrix and tensor factorizations are approached from optimization perspective. While proven to be effective, optimization-based matrix and tensor factorizations usually involve hyperparameters tuning, with one of the major hyperparameters being the matrix or tensor rank. However, when the number of hyperparameters is more than 3 or 4, tuning them becomes computationally expensive. This talk approaches the problem from the Bayesian perspective and shows how hyperparameter tuning can be eliminated while providing comparable or even better performance than corresponding optimization-based algorithms.

# Part III Oral Presentations

## General Guidelines

- ✚ All presentation times are shown in **Hong Kong Standard Time (UTC+8)**;
- ✚ Duration for Invited Oral Presentation: 20 Minutes of Presentation including 3-5 Minutes of Q&A;
- ✚ Duration for Regular Oral Presentation: 15 Minutes of Presentation including 2-3 Minutes of Q&A;
- ✚ All presenters are requested to reach the Session Room 15 minutes prior to the schedule time and complete their presentation on time;
- ✚ Presenters should prepare PowerPoint or PDF Files for Presentation with Paper ID (**CNT\*\*\*\*** or **ML\*\*\*\***) marked in the last page;
- ✚ Signed and stamped presentation certificate would be awarded at the conclusion of the session.

## On-site Oral Presentation Guidelines

### **Devices Provided by the Conference Organizer:**

- ✚ Laptops (with MS-Office & Adobe Reader)
- ✚ Projectors & Screen, Laser Sticks, Microphones
- ✚ Please send us the PowerPoint once it is ready and have the PPT back up in a U-disk. For presenters who do not send the PowerPoint, please save it in the laptop of the corresponding session 15 mins in advance. Kindly tell the Session Chair (before the start of your session) that you are presenter.

## Online Oral Presentation Guidelines

- ✚ Online Oral Presentation will be conducted via Microsoft Teams Meeting.
- ✚ If a presenter is not able to show up via Teams, the session chair/conference secretary will play the pre-recorded video presentation during his/her scheduled presentation time. If listeners have questions about the presentation, please contact the conference secretary to forward the questions.

## Best Oral Presentations Selection Guidelines

### **Selection Criteria:**

ONE best presentation will be selected from EACH session based on the following criteria:

- ✓ Research Quality
- ✓ Presentation Performance
- ✓ Presentation Language
- ✓ Interaction with Listeners
- ✓ PowerPoint Design
- ✓ Effective Communications

### **Selection Procedure:**

- ✓ An assessment sheet will be delivered to listeners before the session.
- ✓ Write the numbers of two best presentations and submit the filled assessment sheet (with the

listener's name and signature) to the Session Chair before the session termination.

- ✓ The Session Chair will count the votes for each presentation and name the winner based on the maximal number of votes. The Session Chair has three votes but can use only one in favor of his/her own presentation (if any). To avoid any conflict of interests, only registered listeners are entitled to vote.

#### **Best Oral Presentations Award:**

- ✓ This award consists of free registration to the next conference CECNet 2026 or MLIS 2026 and a certificate.
- ✓ The awards will be announced at the official website after the conference.

#### [Assessment Sheet Sample](#)

### **CECNet 2025 & MLIS 2025 Oral Presentation Assessment**

Dear participants,

After carefully listening to the presentations of this session, please kindly recommend two excellent Oral Presentations with reference to the following evaluation criteria.

The Session Chair will count the votes from each presentation and select ONE Best Oral Presentation in this session. If there is a tie, the Session Chair will make the final decision.

The winner will be announced at the official website after the conference.

#### **You can refer to the following Criteria:**

| Items       | Assessment                                                  |
|-------------|-------------------------------------------------------------|
| Content     | Right, Logical, Original, Well-Structured                   |
| Language    | Standard, Clear, Fluent, Natural                            |
| Performance | Spirited Appearance, Dress Appropriately, Behaves Naturally |
| PPT         | Layout, Structure, Typeset, Animation, Multimedia           |
| Reaction    | Build a Good Atmosphere, Speech Time Control Properly       |

#### **Please write down paper ID and give reasons for your recommendation:**

| Paper ID | Reasons |
|----------|---------|
|          |         |
|          |         |

Evaluated by: \_\_\_\_\_ (Paper ID: \_\_\_\_\_)

Note: When the session finished, please fill it out and give it to the Session Chair so that the Best Oral Presentation in this session can be selected.

## Session 1: Electronic Devices and Communication Systems

**Time:** 14:00-17:05, November 25, 2025

**Location:** VIP Room I-II, 4th Floor, Park Hotel Hong Kong

**Session Chair:** Assoc. Prof. Oscar Alonso, University of Barcelona, Spain

**Online Room Link:** <http://www.academicconf.com/teamslink?confname=cecnet2025>

|             |                            |                                                                                                                                                                                                                         |
|-------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00-14:20 | CNT3700<br>(Invited)       | <b>Designing for Autonomy: Ultra-Low-Power IoT from Sensor to System</b><br><i>Assoc. Prof. Oscar Alonso, University of Barcelona, Spain</i>                                                                            |
| 14:20-14:40 | CNT3715<br>(Invited)       | <b>High-gain Design of 6×26 Slotted Waveguide Array Antenna for Ku-band Wave Monitoring RADAR System</b><br><i>Prof. Kyeongsik Min, National Korea Maritime and Ocean University, South Korea</i>                       |
| 14:40-14:55 | CNT3792                    | <b>TFFlow: Lightweight Detection of Encrypted Malicious Traffic via Time–frequency Features</b><br><i>Assoc. Prof. Xucheng Luo, University of Electronic Science and Technology of China, China</i>                     |
| 14:55-15:10 | CNT3717                    | <b>Detecting the Status of Vending Machines Using Image Recognition</b><br><i>Dr. Hironao Yamada, Gifu University, Japan</i>                                                                                            |
| 15:10-15:25 | CNT3777                    | <b>Giant Spin Ensembles in Waveguide Magnonics</b><br><i>Dr. Ziqi Wang, Hong Kong Baptist University, China</i>                                                                                                         |
| 15:25-15:40 | Coffee Break               |                                                                                                                                                                                                                         |
| 15:40-15:55 | ML1783                     | <b>Modeling the Aerodynamics of a Double-curvature Wing Under the Influence of Fan Airflow: The H.Coandă Effect</b><br><i>Mr. Madi Akhmejanov, West Kazakhstan Machine Building Company JSC, Republic of Kazakhstan</i> |
| 15:55-16:10 | ML1799                     | <b>Multi-stage Learning for Visually Similar Road User Detection and Tracking</b><br><i>Dr. Young Chul Lim, Daegu Gyeongbuk Institute of Science &amp; Technology, South Korea</i>                                      |
| 16:10-16:25 | ML1784                     | <b>TAGC-2: More Efficient Transformer Training in Distributed Environments</b><br><i>Mr. Igor Polyakov, ITMO University, Russia</i>                                                                                     |
| 16:25-16:40 | ML1782                     | <b>F-MIADQN: Fuzzy-Enhanced Multi-Agent Deep Q-Learning for Adaptive Cognitive Development</b><br><i>Ms. Adreane Dimitrova, Burgas Free University, Bulgaria</i>                                                        |
| 16:40-16:55 | CNT3695<br>(Online)        | <b>Development of Fast Timing Silicon Sensors for the Future Electron-Ion Collider</b><br><i>Dr. Marcos Vazquez Nuñez, Universitat de Valencia, Spain</i>                                                               |
| 16:55-17:05 | Awarding and Taking Photos |                                                                                                                                                                                                                         |

## Session 2: Intelligent Systems and Industry Applications

**Time:** 09:00-12:00, November 26, 2025

**Location:** VIP Room I-II, 4th Floor, Park Hotel Hong Kong

**Session Chair:** Prof. Joanna Studzińska, Kozminski University, Poland

**Online Room Link:** <http://www.academicconf.com/teamslink?confname=cecnet2025>

|             |                                  |                                                                                                                                                                                                                             |
|-------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00-09:20 | CNT3771<br>(Invited)<br>(Online) | <b>Organic Transistor-based Chemical Sensors Functionalized with Artificial Receptors</b><br><i>Prof. Tsuyoshi Minami, Institute of Industrial Science, The University of Tokyo, Japan</i>                                  |
| 09:20-09:35 | CNT3693                          | <b>Still Not a Remedy for Academics: The Use of Generative AI-powered Tools in Bibliometric Analysis</b><br><i>Dr. Kirill Sarachuk, BTU Cottbus-Senftenberg, Germany</i>                                                    |
| 09:35-09:50 | CNT3697                          | <b>Design of an Intelligent System for Analyzing Urban Public Spaces Based on Feature Vector Abstraction</b><br><i>Prof. Juergen Doellner, University of Potsdam, Germany</i>                                               |
| 09:50-10:05 | CNT3731                          | <b>Predicting the Maximum Infection Rate of an Epidemic and Its Time of Occurrence</b><br><i>Prof. Anton van Wyk, University of the Witwatersrand, South Africa</i>                                                         |
| 10:05-10:20 | CNT3789                          | <b>New Technologies in the Work of Legal Counsels in Civil Proceedings – Between Digitalization of Justice and Procedural Safeguards. Some Perspectives</b><br><i>Prof. Joanna Studzińska, Kozminski University, Poland</i> |
| 10:20-10:35 | Coffee Break                     |                                                                                                                                                                                                                             |
| 10:35-10:50 | ML1773                           | <b>A Unified Reinforcement Learning Framework for Comprehensive UAV Railway Inspection</b><br><i>Mr. Chao Wang, China Academy of Railway Sciences Corporation Limited, China</i>                                            |
| 10:50-11:05 | ML1785                           | <b>A Generative AI Pipeline for Sustainable Product Design in Additive Manufacturing Applications</b><br><i>Dr. Ramon Angosto Artigues, AIMEN Technology Centre, Spain</i>                                                  |
| 11:05-11:20 | ML1792                           | <b>Didactic Aids in Technical Education</b><br><i>Prof. István Szőköl, Trnava University in Trnava, Slovakia</i>                                                                                                            |
| 11:20-11:35 | ML1804                           | <b>Comparative Study of Machine Learning Algorithms and Software Platforms for Cost Estimation in the Steel Industry</b><br><i>Prof. Filiz Ersöz, OSTIM Technical University, Turkey</i>                                    |
| 11:35-11:50 | ML1803                           | <b>On Drawing Sheet Metals into Round Cups with Servo Presses Using Finite Element Method Based on Artificial Intelligence</b><br><i>Prof. Kuang-Jau Fann, National Chung Hsing University</i>                              |
| 11:50-12:00 | Awarding and Taking Photos       |                                                                                                                                                                                                                             |

## Session 3: Artificial Intelligence Algorithms and Models

**Time:** 14:00-17:00, November 26, 2025

**Location:** VIP Room I-II, 4th Floor, Park Hotel Hong Kong

**Session Chair:** Dr. Yiu-Kai Ng, Brigham Young University, USA

|             |                            |                                                                                                                                                                                                          |
|-------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00-14:20 | ML1772<br>(Invited)        | <b>On the Expressive Power of ODE-based Neural Networks</b><br><i>Prof. Hirotada Honda, Faculty of Information Networking for Innovation and Design (INIAD), Japan</i>                                   |
| 14:20-14:35 | CNT3637                    | <b>Instant Learning with Indexing Neural Networks</b><br><i>Mrs. Natalie Loginova, ElectricProfi LLC, Russia</i>                                                                                         |
| 14:35-14:50 | CNT3677                    | <b>A Self-calibrated Feature Pyramid Network with Attention Mechanism for Accurate Small Object Detection</b><br><i>Mr. Binghua Ren, Xi'an Jiaotong University, China</i>                                |
| 14:50-15:05 | CNT3719                    | <b>Graph Contrastive Learning with Contextual Integration: Dual Random Walks for Contrastive Views</b><br><i>Assoc. Prof. Dongqi Wang, Northeastern University, China</i>                                |
| 15:05-15:20 | CNT3729                    | <b>A Graph Contrastive Learning Algorithm Integrating Graph Transformer</b><br><i>Prof. Dongming Chen, Northeastern University, China</i>                                                                |
| 15:20-15:35 | Coffee Break               |                                                                                                                                                                                                          |
| 15:35-15:50 | CNT3732                    | <b>Linear Least Squares Parameter Inference for the SIR Epidemiology Model</b><br><i>Prof. Anton van Wyk, University of the Witwatersrand, South Africa</i>                                              |
| 15:50-16:05 | ML1768                     | <b>Using Document and Formula Vectors to Retrieve Answers to Questions in Math</b><br><i>Dr. Yiu-Kai Ng, Brigham Young University, USA</i>                                                               |
| 16:05-16:20 | CNT3764                    | <b>Improved Stacked Autoencoder Combined with Density-based Clustering for Analog Circuit Fault Diagnosis</b><br><i>Ms. Naixin Zhou, University of Electronic Science and Technology of China, China</i> |
| 16:20-16:35 | ML1766                     | <b>A Swin Transformer Approach for Amyloid PET Image Analysis in Neurodegenerative Disease Detection</b><br><i>Dr. Mauro Mazzei, National Research Council, Italy</i>                                    |
| 16:35-16:50 | ML1802                     | <b>LLMs in the Loop: From Ratings to Ranked Recommendations</b><br><i>Dr. Yiu-Kai Ng, Brigham Young University, USA</i>                                                                                  |
| 16:50-17:00 | Awarding and Taking Photos |                                                                                                                                                                                                          |

## Video Presentation

|         |                                                                                                                                                                            |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CNT3762 | <b>Hierarchical Experts Network-based Two-phase Learning for Full-reference Image Quality Assessment</b><br><i>Dr. Heyang Liu, Brown University, USA</i>                   |
| CNT3778 | <b>Performance Analysis of the Low Power Synchronization Signals in 5G NR</b><br><i>Mr. Igor Serunin, LG Electronics Russia R&amp;D Lab, Russia</i>                        |
| ML1786  | <b>Legal Aspects of Artificial Intelligence Application in Autonomous Weapon Systems</b><br><i>Prof. Dimiter Velev, University of National and World Economy, Bulgaria</i> |
| ML1790  | <b>Sustainable Business Development with GenAI</b><br><i>Prof. Plamena Zlateva, University of National and World Economy, Bulgaria</i>                                     |
| ML1807  | <b>Acyclic Total Coloring of Graphs with Large Girths</b><br><i>Dr. Xiaoya Li, China University of Mining and Technology, China</i>                                        |

## Part IV Conference Venue

### **Park Hotel Hong Kong** (香港百樂酒店)

**Address:** 61–65 Chatham Road South, Tsim Sha Tsui, Kowloon, Hong Kong

**Email:** [info.phhk@parkhotelgroup.com](mailto:info.phhk@parkhotelgroup.com)

**Phone:** (852) 2731 2100

Park Hotel Hong Kong, conveniently located in the heart of Kowloon's entertainment and business district of Tsim Sha Tsui (also lovingly known by locals as "TST"). Fitted with the latest technology, the guest rooms provide maximum comfort for both leisure getaways and business trips, complete with spectacular views of the bustling night scene. The Star Ferry, Tsim Sha Tsui and East Tsim Sha Tsui MTR stations are five to ten minutes' walk away, giving you easy access to the rest of this vibrant city.



### **Access to the Venue**

#### **\*From Hong Kong International Airport to the hotel**

##### **1. By MTR:**

Airport MTR Station (Airport Express-Hong Kong direction) → Lai King MTR Station (Tsuen Wan Line - Central direction) → Tsim Sha Tsui MTR Station (B2 exit) → walk 500 meters to the hotel  
机场站(机场快线-香港方向) → 荔景站(荃湾线-中环方向) → 尖沙咀站 B2 出口，步行 500 米左右到酒店

##### **2. By Bus:**

From Hong Kong International Airport, walk 900 meters to Airport (Ground Transportation Center) Bus Station, take bus No. A21 (CTB)(Hung Hom direction) → Granville Road Bus Station → walk 40 meters to the hotel

从机场步行约 900 米到机场(地面运输中心)公交站乘坐城巴 A21 路(红磡方向) → 加连威老道公交站 → 步行约 40 米到酒店

#### **\*From Hong Kong West Kowloon High Speed Rail Station to the hotel**

From Hong Kong West Kowloon High Speed Rail Station, walk about 300 meters → Austin MTR Station (Tuen Ma Line - Wu Kai Sha direction) → East Tsim Sha Tsui MTR Station (P3 exit) → walk 600 meters to the hotel

西九龙高铁站步行约 300 米到柯士甸地铁站(屯马线-乌溪沙方向) → 尖东站 P3 出口 → 步行 600 米到酒店

Location map of the hotel (by MTR station)

Exit B2 of Tsim Sha Tsui Station and Exit P3 of East Tsim Sha Tsui Station are 5-minute walk away.

## 港鐵路綫圖 MTR system map



| From Hotel to            | Time       | By   |
|--------------------------|------------|------|
| Hong Kong Science Museum | 5 minutes  | Walk |
| Tsim Sha Tsui Promenade  | 10 minutes | Walk |
| Star Ferry               | 15 minutes | Walk |
| Clock Tower              | 15 minutes | Walk |
| Harbour City             | 20 minutes | Walk |
| Lan Kwai Fong            | 20 minutes | Ride |

### Note:

The organizing committee has never authorized any third party to conduct airport transfers. Please arrange your own or take public transport (bus, taxi or metro).

# Part V Acknowledgements

On behalf of the CECNet 2025 & MLIS 2025 Organizing Committee, we would like to take this opportunity to express our sincere gratitude to our participants. We would also like to express our acknowledgements to the Technical Program Committee members who have given their professional guidance and valuable advice as reviewers. For those who contribute to the success of the conference organization without listing the name below, we would love to say thanks as well.

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## **Technical Program Committee**

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## Memo Pages

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