Conference Program

2026 10th International Conference on Intelligent Computing, Communication and Network Technology

(icICCNT 2026)

September 7-9, 2026 | Paris, France

Organized by

UPEC Université Paris-Est Créteil Val de Marne — Connaissance - Action

Université Paris 8 des Créations

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Welcome Message

Dear Distinguished Delegates,

On behalf of the Conference Committee, it is our great pleasure to warmly welcome you to the International Conference on Intelligent Computing, Communication and Network Technology (icICCNT 2026) in the wonderful city of Paris, France.

We are delighted to bring together researchers, academics, industry professionals, and practitioners from around the world to share their latest research findings, innovations, and experiences in intelligent computing, communication systems, and network technologies. icICCNT 2026 serves as a premier international forum for discussing emerging trends, cutting-edge developments, and practical applications in areas such as communication systems, networking, wireless technologies, the Internet of Things (IoT), artificial intelligence, and cybersecurity. The conference fosters collaboration among academia, industry, and research institutions through high-quality technical sessions, keynote lectures, session keynote lecturers, and networking opportunities, encouraging the exchange of ideas and the development of future scientific and technological partnerships. We are confident that icICCNT 2026 will contribute to advancing knowledge and innovation while inspiring new research directions and collaborative initiatives.

We would like to express our sincere appreciation to all individuals and organizations whose efforts have contributed to the success of icICCNT 2026. Special thanks are extended to the Program Chairs, members of the Technical Program Committee, reviewers, organizing committee members, session chairs, and volunteers, whose dedication and hard work have made this event possible. We would also like to extend our particular appreciation to Prof. Larbi Boubchir for his outstanding dedication and invaluable contributions, both as Program Chair and as a key leader of the local organization team. His commitment, professionalism, and continuous support have played a crucial role in the successful preparation and organization of icICCNT 2026.

We are particularly grateful to our distinguished keynote speakers, Prof. Abdallah Shami from Western University, Canada, Prof. Gyu Myoung Lee from Liverpool John Moores University, United Kingdom, and Prof. Shuai Han from Harbin Institute of Technology, China, for sharing their expertise, insights, and vision with the icICCNT 2026 community. Their valuable contributions provide participants with a comprehensive overview of recent advances, emerging trends, and future challenges in the fields of intelligent computing, communication systems, and network technologies. We believe that their presentations will serve as an important source of inspiration and knowledge for all attendees, fostering new ideas, stimulating scientific discussions, and encouraging future research and international collaboration.

Beyond its technical program, icICCNT 2026 offers an excellent opportunity for networking, collaboration, and meaningful interaction among researchers and professionals from diverse backgrounds. We encourage all participants to actively engage in discussions, exchange ideas, and explore new opportunities for research, innovation, and international cooperation.

Finally, we sincerely thank you for your participation and support. We hope that your experience at icICCNT 2026 will be both professionally rewarding and personally memorable. We look forward to your valuable contributions and to the continued growth and success of the icICCNT conference series in the years to come.

Yours sincerely,
Prof. Jalel Ben Othman
General Chair, icICCNT 2026

Useful Information

Conference Venue

Conference Center (Centre des colloques)

3.01 (third floor), Salle 50 e RDC

➢**Address:**

Place du Front populaire, 93322 Aubervilliers, France (métro: ligne 12 - station "Front populaire")

Time Zone:

➢ **UTC/GMT+2**

September Climate & Weather Averages in Paris:

➢ **High Temp: 21°C** ➢ **Low Temp: 12°C**

Bank and Foreign Exchange:

➢ **The Currency is Euro here**

Emergency Number in Paris:

➢ **17**

Important Notes

- ✧ Please take care of your belongings during the conference. The conference organizer does not assume any responsibility for the loss of personal belongings of the participants.
- ✧ Please wear delegate badge during the conference. There will be NO access for people without a badge. Never discard your badge at will.
- ✧ Accommodation is not provided. Early reservation is suggested to be made for delegates.
- ✧ Please show the badge and meal coupons during lunch and dinner.
- ✧ Don't stay too late in the city and don't be alone in the remote area. Be aware of the strangers who offer you service, signature of charity, etc., at scenic spots. More Tourist Information and Security tips are available online.

Virtual Meeting Software

ZOOM Download: https://zoom.us/

ZOOM Using Instruction and silde template: www.iccnt.org/kits.zip

- ZOOM online conference room will be open 30 mins before scheduled time.
- It's suggested to use headset with microphone or earphone with microphone.
- Please choose right room to join in while test and presentation session.
- Prepare the PPT file of your presentation on your laptop in advance.
- Duration of Each Presentation: 15 Minutes in total including 12 Minutes Presentation and 3 Minutes Q&A.
- The regular oral presentation time arrangement is for reference only. In case any absence or some presentations are less than 15 minutes, please enter the room before session starts.

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Author: Paper ID-Name	**PF001-John Smith**
Keynote Speaker: Keynote-Name	**Keynote-John Smith**
Session Keynote Lecturer: Lecturer-Name	**Lecturer- John Smith**
Committee Member: Committee-Name	**Committee-John Smith**

Keynote Speeches

Speech 1

September 8, 2026, Tuesday, 09:45-10:25, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Zoom ID: 869 8619 6467 Password: 090709

Prof. Abdallah Shami

Fellow of IEEE, Fellow of CAE, Fellow of EIC

Western University, Canada

Speech Title: Toward Self-Managing Networks: AI-Driven Autonomous Network and Service Management

Abstract: Future communication networks are rapidly evolving into highly distributed, cloud-native systems spanning heterogeneous infrastructures, technologies, and administrative domains. As networks grow in scale, complexity, and dynamism, traditional human-driven management approaches are becoming increasingly difficult to sustain. The next generation of networks will require a fundamental shift toward zero-touch and autonomous network and service management, where networks can continuously observe their environment, anticipate changing conditions, make intelligent decisions, and adapt with minimal human intervention.

This keynote will explore the evolution toward self-managing communication networks and the role of artificial intelligence in enabling this transformation. It will discuss key challenges in developing learning-based approaches for real-time network management, including resource allocation, load balancing, network slicing, routing, scaling, and self-healing under uncertain and continuously changing conditions.

In addition, the keynote will highlight the importance of moving beyond simulation toward realistic, end-to-end experimental environments for developing and validating autonomous networking technologies.

Bio: Abdallah Shami is a Professor in the Department of Electrical and Computer Engineering at Western University, London, Ontario, Canada, where he serves as Department Chair and holds a Western Research Chair. He is also the Director of the Optimized Computing and Communications Laboratory. His research interests include smart systems, network and service management, and applied machine learning. He currently serves as Editor-in-Chief of IEEE Transactions on Network and Service Management and has held editorial roles with several international journals. He is also the Chair of the IEEE Region 7 Publications and Communications Committee.
Dr. Shami is a Fellow of the IEEE, the Canadian Academy of Engineering (CAE), and the Engineering Institute of Canada (EIC).

Speech 2

September 8, 2026, Tuesday, 10:40-11:20, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Zoom ID: 869 8619 6467 Password: 090709

Prof. Gyu Myoung Lee

Liverpool John Moores University, UK

Speech Title: New Internet Design: Building the Trusted 6G & Agentic AI Infrastructure for Future Digital Ecosystems

Abstract: As future 6G networks evolve to fully integrate with societal, physical, and cyber infrastructures, the paradigm of network design is undergoing a fundamental shift transitioning from merely adding AI capabilities to embedding AI directly into the architectural core. Building upon the visionary framework of 3C (Co-design, Collaboration, and Composability) networks, this keynote presents a New Internet Design, focusing on the rapidly emerging Agentic AI Ecosystem.
As intelligence becomes increasingly distributed, managing autonomous AI agents introduces critical challenges in scale, interoperability, and trust, especially within strict data sovereignty and regulatory landscapes like Europe. To bridge the gap between 6G network infrastructure and distributed AI, this talk presents a comprehensive architectural blueprint featuring AI Agent Orchestration, AI Agent Spaces, and an AI Agent Mesh powered by an Agent Name Service (ANS).
By unifying 3C-based 6G networks with a federated agent infrastructure, this presentation outlines how to construct a trusted, human-centric, and fully interoperable Internet foundation designed for the next generation of intelligent digital services.

Bio: Gyu Myoung Lee is a professor at the Liverpool John Moores University (LJMU), UK. He was affiliated with KAIST, Daejeon, Rep. of Korea, as an Adjunct Professor from 2012 to 2024. Before joining the LJMU in 2014, he worked at the Institut Mines-Telecom from 2008. Until 2012, he was invited to work at ETRI, Rep. of Korea. He worked as a research professor at KAIST, Rep. of Korea and as a guest researcher at NIST, USA, in 2007. His research interests include Internet of Things, digital twin, computational trust, blockchain with privacy preservation, data and AI governance, knowledge centric networking and services considering all vertical services, Smart Grid, energy saving networks, cloud-based big data analytics platform and multimedia networking and services. Prof. Lee has been actively participating in standardization meetings including ITU-T SG 13 and SG20, IETF and oneM2M, etc., and currently serves as a Working Party chair and the Rapporteur of Q16/13 on trustworthy networking and services and Q4/20 on data analytics, sharing, processing and management in ITU-T. He is the Vice-Chair of ITU-T FG-AINN as well as the Convenor of Web3-adhoc. He was also the chair of ITU-T Focus Group on Data Processing and Management (FG-DPM). He has contributed more than 500 proposals for standards and published more than 200 papers in academic journals and conferences. He received several Best Paper Awards in international and domestic conferences and served as a reviewer of IEEE journals/conference papers and an organizer/member of committee of international conferences. He is a Senior Member of IEEE.
Prof. Lee received his BS degree in electronic and electrical engineering from Hong Ik University, Seoul, Rep. of Korea, in 1999 and MS, and PhD. degree from KAIST, Daejeon, Rep. of Korea, in 2000 and 2007, respectively.

Speech 3

September 8, 2026, Tuesday, 11:20-12:00, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Zoom ID: 869 8619 6467 Password: 090709

Prof. Shuai Han

Harbin Institute of Technology, China

Speech Title: Integrated Space-Terrestrial Network (ISTN): The Road Ahead

Abstract: Integrated space-terrestrial network (ISTN) has been envisioned as a key component of future 6G systems as it enable ubiquitous connectivity, seamless coverage, and diversified services on a global scale. However, high mobility, rapidly varying network topology, constrained on-board resources, and heterogeneous service requirements pose fundamental challenges to the design of ISTNs.
This keynote will present recent research efforts toward addressing these challenges from multiple perspectives. First, channel modeling and multi-dimensional parameter estimation for highly dynamic satellite environments will be introduced. At the physical layer, advanced multiple-access and interference management based on rate-splitting multiple access will be discussed. At the network layer, distributed network orchestration for reliable service provisioning under dynamic conditions will be presented. At the application layer, emerging satellite communication architectures enabled by holographic metasurfaces will be explored as a representative use case.
Finally, the keynote will provide an outlook on promising research opportunities and open challenges toward more intelligent, and service-oriented ISTNs.

Bio: Shuai Han (S'11–M'12–SM'17) is currently a full Professor at the Department of Electronics and Communication Engineering, Harbin Institute of Technology. Shuai Han's research interests include intelligent communications, satellite IoT and integrated satellite-terrestrial communication networks. Over his academic career, his students and he have contributed in various fields in wireless networks.
He has authored or co-authored over 100 technical papers in major journals and conferences. As PI, he has more than thirty grants on wireless networks and positioning. He is an associate editor of IEEE China Communications, Journal of Telemetry, Tracking and Command, Journal of Signal Processing.

Session Keynote Lectures

Lecture 1

September 8, 2026, Tuesday, 14:00-14:25, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Zoom ID: 869 8619 6467 Password: 090709

Prof. Farid Naït-Abdesselam

Université Paris Cité, France

Speech Title: Securing Mobile Platforms Against Intelligent Malware: Emerging Threats and Future Directions

Abstract: The widespread adoption of smartphones and mobile applications has made mobile platforms an essential part of today's digital ecosystem, while also turning them into attractive targets for increasingly sophisticated malware. Machine learning has emerged as a powerful approach for detecting and classifying such threats at scale. Yet, the growing reliance on learning-based detectors has introduced new vulnerabilities, as adversaries increasingly seek to manipulate both the detection process and the data on which these systems rely.
This keynote explores the evolving landscape of mobile malware detection under intelligent and adaptive adversaries. It presents advances in learning-based detection and robust malware representation, and examines emerging threats ranging from adversarial evasion and data poisoning to AI-assisted malware manipulation. Particular attention is given to the growing role of large language models and generative AI in enabling more automated, adaptive, and stealthy attacks.
The talk also discusses defense mechanisms for improving the robustness of learning-based detectors and concludes with open challenges and future research directions toward resilient and trustworthy security solutions for next-generation mobile platforms.

Bio: Farid Naït-Abdesselam is a Full Professor of Computer Science at Université Paris Cité. His research lies at the intersection of networking, cybersecurity, and distributed systems, with a particular focus on secure communication systems, network resilience and optimization, intrusion and malware detection, adversary-aware machine learning, and adaptive defense strategies. His work addresses the design of robust and trustworthy mechanisms for securing complex, constrained, and heterogeneous networked environments.
He has authored over 180 peer-reviewed publications, edited two scientific books, and contributed several book chapters on topics including network security, malware forensics, blockchain technologies, and advanced networked systems. His research combines theoretical foundations with the design, implementation, and experimental evaluation of practical security solutions, with applications spanning mobile and wireless systems, vehicular and drone networks, sensor networks, distributed infrastructures, and emerging Internet architectures. His recent research interests include intelligent and adaptive cyber threats, adversarial machine learning, AI-assisted malware analysis, and resilient defense mechanisms for next-generation networked systems.

Lecture 2

September 8, 2026, Tuesday, 14:25-14:50, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Zoom ID: 869 8619 6467 Password: 090709

Prof. P. Takis Mathiopoulos

University of Athens, Greece

Speech Title: Channel Modeling for Space-Aerial-Terrestrial Integrated Networks

Abstract: With the development of communication technologies, space-aerial-terrestrial (SAT) heterogeneous networks have emerged in the context of 6th-Generation (6G) communications. Incorporating various communication systems and devices, such as satellites and unmanned aerial vehicles (UAVs), they operate via complex and diverse communication links, which require accurate channel models. In this presentation we first review the developments and requirements of these communication links by focusing on the current state of research and challenges in channel modeling between such heterogeneous networks. To unify these methods, a general channel modeling approach is proposed by considering a SAT integrated network (SATIN). By introducing fictitious reference points at an altitude level of approximately 8km above the ground, SAT channels can be divided into upper- and lower-level channels. The advantage of this approach is that each channel can be modeled using different methods, while the complete channel impulse response can be obtained by convolving known data for the two channels thus allowing flexible utilization of existing channel models. Through a case study it will be shown that, by taking the measured path loss as a reference, the path loss generated by the proposed approach is more accurate than that obtained from the standard channel models.

Bio: P. Takis Mathiopoulos received the Ph.D. degree in digital communications from the University of Ottawa, Ottawa, Canada, in 1989. From 1982 to 1986, he was with Raytheon Canada Ltd., working in the areas of air navigational and satellite communications.
In 1989, he joined the Department of Electrical and Computer Engineering (ECE), University of British Columbia (UBC), Vancouver, Canada, as an Assistant Professor and where he was a faculty member until 2003, holding the rank of Professor from 2000 to 2003. From 2000 to 2014, he was the Director (2000 - 2004) and then the Director of Research of the Institute for Space Applications and Remote Sensing (ISARS), National Observatory of Athens (NOA). Since 2014, he is Professor of Telecommunications at the Department of Informatics and Telecommunications, National and Kapodistrian University of Athens, Athens, Greece. He also held visiting faculty long term honorary academic appointments as Guest Professor at Southwest Jiao Tong University (SWJTU), Chengdu, China, and Guest (Global) Professor at Keio University, Tokyo, Japan.
His research activities and contributions have dealt with wireless terrestrial and satellite communication systems and network as well as in remote sensing, LiDAR systems, and information technology, including blockchain systems. In these areas, he has coauthored some 160 journal papers published mainly in various IEEE journals, 1 book (edited), 5 book chapters, and more than 180 international conference papers. Dr. Mathiopoulos has been or currently serves on the editorial board of several archival journals, including the IET Communications as an Area Editor, the IEEE Transactions on Communications, the Remote Sensing Journal, and as Specialty Chief Editor for the Arial and Space Network Journal of Frontiers.
From 2001 to 2014, he has served as a Greek Representative to high-level committees in the European Commission and the European Space Agency. He has been a member of the Technical Program Committees (TPC) for numerous IEEE and other international conferences and has served as TPC Vice Chair of several IEEE conferences. He has delivered numerous invited presentations, including plenary and keynote lectures, and has taught many short courses all over the world. As a faculty member UBC, he has been awarded an Advanced Systems Institute (ASI) Fellowship as well as a Killam Research Fellowship. He is also the co-recipient of three best international IEEE conference paper awards and has received by the IEEE Communication Society the Satellite and Space Communication Technical Committee “2017 Distinguished Service Award” for outstanding contributions in the field of Satellite and Space Communications.

Lecture 3

September 8, 2026, Tuesday, 16:40-17:05, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Zoom ID: 869 8619 6467 Password: 090709

Prof. Brigitte Jaumard

Concordia University, Canada

Speech Title: On the complementarity between large-scale optimization and reinforcement learning Case study: Segment Routing in Optical Networks

Abstract: Over the past decades, the combination of hardware and algorithmic improvements yielded massive speed-ups inlarge scale optimization. On the other hand, machine learning (ML), and in particular Reinforcement Learning, has taken an amazing journey in the last decade. While large scale optimization and mathematicalprogramming algorithms excel at exploiting models, reinforcement learning performs well in model prediction. Then, how can they help each other solving dynamic large scale problems?
Mathematical programming and reinforcement learning serve different purposes in optimization. Mathematicalprogramming is a traditional approach that uses mathematical equations to model and solve optimizationproblems. It is often used for problems with well-defined objectives and constraints. Reinforcement learning, onthe other hand, is a more dynamic and adaptive approach that uses trial and error to learn and improve overtime. It is particularly useful for problems with complex, non-linear objectives and where the environment is notfully known. In terms of how they can help each other, mathematical programming can provide the theoreticalframework and constraints for reinforcement learning to operate within. Reinforcement learning can then use this framework to learn and improve decision-making processes, potentially leading to more efficient and effective solutions to optimization problems. In other words, the combination of these two approaches can leadto more robust and scalable optimization solutions that can handle the complexities of real-world problems. We will explore this new paradigm combining mathematical programming and reinforcement learning. We willillustrate it with segment routing in optical networks, which is now widespread thanks to a simplified controlplane and increased scalability to meet the evolving traffic needs of 6G and beyond.

Bio: Brigitte Jaumard is a professor in the Computer Science and Software Engineering (CSE) Department at Concordia University. Her research focuses on mathematical modeling and algorithm design (large-scale optimization and machine learning) for problems arising in communication networks, transportation and logistics networks.
Recent studies include the design of efficient optimization/machine learning algorithms for network design, dimensioning and provisioning, scheduling in edge-computing and clouds, and 5G networks. During her 2020-2021 sabbatical year, she was a senior advisor for the Montreal Ericsson GAIA (Global Artificial Intelligence Accelerator) research center and a research lead with Ciena. She was the chief scientist of CRIM during 2019-2021, and then the first scientific director of Confiance IA in 2024.

She was awarded several research chairs (Canada Research Chair and Concordia Research Chair, both Tier I during the years 2000-2019). B. Jaumard has published over 400 papers in international journals in Optimization, Machine Learning and in Telecommunications.

Lecture 4

September 8, 2026, Tuesday, 16:15-16:40, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Zoom ID: 869 8619 6467 Password: 090709

Prof. Anand Nayyar

Duy Tan University, Vietnam

Speech Title: Cyber-Physical Systems as the Foundation of Industry 5.0: Enabling Human-Centric, Resilient, and Sustainable Smart Manufacturing

Abstract: Cyber-Physical Systems (CPS) play a crucial role in the transformation from Industry 4.0 to Industry 5.0 by integrating computation, communication, sensing, and physical processes into intelligent industrial environments. While Industry 4.0 emphasizes automation, connectivity, and data-driven production, Industry 5.0 extends these capabilities by focusing on human-centricity, sustainability, and resilience. This study explores how CPS enables the development of adaptive, collaborative, and intelligent manufacturing systems that support effective human–machine interaction and real-time decision-making. By connecting machines, sensors, digital platforms, and human operators, CPS provides the technological foundation for flexible production, predictive maintenance, resource optimization, and personalized manufacturing. The paper also discusses the opportunities and challenges associated with CPS adoption in Industry 5.0, including cybersecurity, interoperability, data governance, system complexity, and workforce readiness. The findings highlight that CPS is not only a technical enabler but also a strategic driver for building future industrial systems that are more efficient, sustainable, resilient, and aligned with human values.

Bio: Dr. Anand Nayyar received Ph.D (Computer Science) from Desh Bhagat University in 2017 in the area of Wireless Sensor Networks, Swarm Intelligence and Network Simulation. He is currently working in School of Computer Science-Duy Tan University, Da Nang, Vietnam as Professor, Scientist, Vice-Chairman (Research) and Director- IoT and Intelligent Systems Lab. A Certified Professional with 280+ Professional certifications from CISCO, Microsoft, CompTIA, Amazon, Alibaba Cloud, Oracle, Google, Salesforce, Tableau, FinOps, Beingcert, EXIN, GAQM, Cyberoam and many more. Published more than 300+ Research Papers in various High-Quality ISI-SCI/SCIE/SSCI Impact Factor- Q1, Q2, Q3, Q4 Journals cum Scopus/ESCI indexed Journals, 80+ Papers in International Conferences indexed with Springer, IEEE and ACM Digital Library, 60+ Book Chapters in various SCOPUS/WEB OF SCIENCE Indexed Books with Springer, CRC Press, Wiley, IET, Elsevier with Citations: (Google Scholar): 23000+, H-Index: 77 and I-Index: 311; (Scopus): 12700+; H-index: 60. Member of more than 60+ Associations as Senior and Life Member like: IEEE (Senior Member) and ACM (Senior Member). He has authored/co-authored cum Edited 70+ Books of Computer Science. Associated with more than 600+ International Conferences as Programme Committee/Chair/Advisory Board/Review Board member. He has completed 1 Grassroot and 1 ASEAN Project. He has 18 Australian Patents, 16 German Patents, 4 Japanese Patents, 44 Indian Design cum Utility Patents, 13 UK Patents, 1 USA Patent, 3 Indian Copyrights and 2 Canadian Copyrights to his credit in the area of Wireless Communications, Artificial Intelligence, Cloud Computing, IoT, Healthcare, Drones, Robotics and Image Processing. He has guided more than 200+ Undergraduate Students (B.S. Degree), 30 MCA, 7 M.S. Students and completed 1 Ph.D Student and currently 3 Ph.D Scholars are working under him. He has completed 4 Research Grants Projects including 1 ASEAN and 1 Glocal 30 Project and 1 Grassroot Project in DTU. Awarded 56 Awards for Teaching and Research—Young Scientist, Best Scientist, Best Senior Scientist, Asia Top 50 Academicians and Researchers, Young Researcher Award, Outstanding Researcher Award, Excellence in Teaching, Best Senior Scientist Award, DTU Best Professor and Researcher Award-2019, 2020-2021, 2022, 2022-2023, 2023-2024, Distinguished Scientist Award by National University of Singapore, Obada Prize 2023, Lifetime Achievement Award 2023, 2024; Asian Admirable Achievers 2024; Distinguished Academic Leader 2024, Lifetime Achievement Award 2024 and many more.
He is listed in Top 2% Scientists as per Stanford University (2020, 2021, 2022, 2023, 2024, 2025), Ad Index (Rank No:1 Duy Tan University, Rank No:2 Computer Science in Viet Nam) and Listed on Research.com (Top

Scientist of Computer Science in Viet Nam- National Ranking: 2; D-Index: 56; World Ranking: 3694).
He is acting as Associate Editor for Computer Communications (Elsevier), International Journal of Sensor Networks (IJSNET) (Inderscience), Tech Science Press- IASC, Cogent Engineering, Human Centric Computing and Information Sciences (HCIS), IEEE Transactions on Artificial Intelligence (IEEE TAI), Indonesian Journal of Electrical Engineering and Computer Science, IJFC, IJISP, IJDST, IJCINI, IJGC, IJSIR, IJBDCN, IJNR, IJSI, IJIES. He is acting as Managing Editor of IGI-Global Journal, USA titled “International Journal of Knowledge and Systems Science (IJKSS)”. He has reviewed more than 5700+ Articles for diverse Web of Science and Scopus Indexed Journals. He is currently researching in the area of Wireless Sensor Networks, Internet of Things, Swarm Intelligence, Cloud Computing, Artificial Intelligence, Drones, Blockchain, Cyber Security, Healthcare Informatics, Big Data and Wireless Communications.

Lecture 5

September 8, 2026, Tuesday, 17:05-17:30, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Zoom ID: 869 8619 6467 Password: 090709

Prof. Loc Nguyen

Loc Nguyen's Academic Network, Vietnam

Speech Title: Is matrix neural network the alternative of convolutional neural network?

Abstract: Currently, deep learning is the most important and popular methodology in artificial intelligence (AI) and artificial neural network (ANN) is the foundation of deep learning. The main drawback of ANN is the boom problem of a huge number of parametric weights when ANN in deep learning establishes a large number of hidden layers. The excellent solution for image processing within context of deep learning is convolutional neural network (CNN) equipped filtering kernel. Another solution of the boom problem is that large parametric weight vector is organized as matrix, which leads to a so-called matrix neural network (MNN). Computation cost of MNN is decreased significantly in comparison with ANN but it is necessary to test the main hypothesis "whether MNN is the alternative of CNN". Moreover, transformer which is the new trend in AI and deep learning, which aims to improve/replace traditional ANN by self-supervised learning, in which attention is the significant mechanism of self-supervised learning. Therefore, the implicit deep meanings of attention and filtering kernel are similar, which represents feature of data, which does not go beyond parametric weights too. In general, the research has two goals: 1) explaining and implementing ANN, CNN, and transformer (attention) and 2) applying analysis of variance (ANOVA) into evaluating the effectiveness of ANN, CNN, and transformer (attention) within context of image classification. The ultimate result is that it is not asserted that MNN is the alternative of CNN but MNN can be an optional choice for implementing ANN instead of focusing on the unique CNN solution. Moreover, the incorporation of MNN and attention in implementing transformer produces a compromising solution of high performance and computational cost.

Bio: Loc Nguyen is an independent scholar from 2017. He holds Master degree in Computer Science from University of Science, Vietnam in 2005. He holds PhD degree in Computer Science and Education at Ho Chi Minh University of Science in 2009. His PhD dissertation was honored by World Engineering Education Forum (WEEF) and awarded by Standard Scientific Research and Essays as excellent PhD dissertation in 2014. He holds Postdoctoral degree in Computer Science from 2013, certified by Institute for Systems and Technologies of Information, Control and Communication (INSTICC) by 2015. Now he is interested in poetry, computer science, statistics, mathematics, education, and medicine. He serves as reviewer, editor, speaker, and lecturer in a wide range of international journals and conferences from 2014. He is volunteer of Statistics Without Borders from 2015. He was granted as Mathematician by London Mathematical Society for Postdoctoral research in Mathematics from 2016. He is awarded as Professor by Scientific Advances and Science Publishing Group from 2016. He was awarded Doctorate of Statistical Medicine by Ho Chi Minh City Society for Reproductive Medicine (HOSREM) from 2016. He was awarded and glorified as contributive scientist by International Cross-cultural Exchange and Professional Development-Thailand (ICEPD-Thailand) from 2021 and by Eudoxia Research University USA (ERU) and Eudoxia Research Centre India (ERC) from 2022. He has published 101 papers and preprints in journals, books, conference proceedings, and preprint services. He is author of 5 scientific books. He is author and creator of 10 scientific and technological products.

Lecture 6

September 8, 2026, Tuesday, 14:50-15:15, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Zoom ID: 869 8619 6467 Password: 090709

Assoc. Prof. Limeng Dong

Northwestern Polytechnical University, China

Speech Title: STAR-RIS aided cell-free cognitive radio combined IoT networks: an efficient transmission scheme under insufficient power supply at RIS

Abstract: To meet the massive data communication needs of 6G in the future, simultaneous transmitting and reflecting reconfigurable intelligent surface (STAR-RIS) draws great attentions in the acdemic and history. Different form conventional RIS, STAR-RIS is capable of providing full-space signal coverage, and the quality of users' data transmission can be significantly improved by properly design the amplitude and phase in each electromagnetic element (EM) of RIS. Although STAR-RIS is a quasi passive device with wide application value in various types of wireless networks, most studies have not considered its power consumption issue. Once the power supply of RIS decreases due to external factors, it cannot support the normal operation of all EMs, resulting in a decrease in the improvement of user data communication performance. Hence, in this lecture, we consider a STAR-RIS enabled cell-free cognitive radio combined IoT network, and set the extreme scenario of insufficient power supply for RIS. In order to effectively improve the communication rate of primary and secondary users in the network, an effective system resource allocation algorithm under different channel state information conditions. In particular, a scheme based on optimal EM selection was proposed for RIS. Simulation experiments have verified that the algorithm can still effectively improve data communication performance compared to existing solutions under this special case of insufficient power.

Bio: Limeng Dong, Associate Professor at the School of Electronics and Information Technology, Northwestern Polytechnical University. He Obtained bachelor's, master's, and doctoral degrees from the School of Electronics and Information Technology at Northwestern Polytechnical University in 2012, 2015, and 2019, respectively. From 2015 to 2017, he was an visiting doctoral student at the School of Electrical Engineering and Computer Science at the University of Ottawa in Canada. From 2019 to 2021, working as a postdoctoral researcher at the School of Information and Communication Engineering, Xi'an Jiaotong University. In 2024 and 2025, he was continuously selected for the list of "World's Top 2% Scientists", which was jointly released by Stanford University and Elsevier in the United States. His main research directions are multi-antenna wireless physical layer security, cognitive radio communication technology, cell-free massive MIMO network technology, and reconfigurable intelligent surface assisted wireless communication theory.

Agenda Overview

Day 1, September 7, 2026, Monday, Central European Summer Time, GMT+2

Online Pretest Session		
Time	**Presenters**	**ZOOM Information**
9:00-10:00	Session Keynote Lecturers, Committee Members, PF035, PF068, PF069,	Zoom ID: 869 8619 6467 Password: 090709

Day 2, September 8, 2026, Tuesday, Central European Summer Time, GMT+2

Time	Schedule
Onsite Room: 3.01 (third floor), Salle 50 e RDC **Zoom ID:** 869 8619 6467 **Password:** 090709 **Host: Prof. Larbi Boubchir, Paris 8 University, France**	
09:00-09:30	**Sign-in & Materials Collection**
09:30-09:45	**Welcome Message** **Prof. Jalel Ben-Othman** **University of Paris Est Créteil, France**
09:45-10:25	**Keynote Speech 1** **Speech Title: Toward Self-Managing Networks: AI-Driven Autonomous Network and Service Management** **Prof. Abdallah Shami** Fellow of IEEE, Fellow of CAE, Fellow of EIC **Western University, Canada**
10:25-10:40	**Group Photo & Coffee Break**
10:40-11:20	**Keynote Speech 2** **Speech Title: New Internet Design: Building the Trusted 6G & Agentic AI Infrastructure for Future Digital Ecosystems** **Prof. Gyu Myoung Lee** **Liverpool John Moores University, UK**
11:20-12:00	**Keynote Speech 3** **Speech Title: Integrated Space-Terrestrial Network (ISTN): The Road Ahead** **Prof. Shuai Han** **Harbin Institute of Technology, China**
12:00-14:00	**Lunch**

14:00-16:00	**Session 1: Cybersecurity and Wireless Communication Systems** Session Chair: Prof. Jalel Ben-Othman, University of Paris Est Créteil, France Session Keynote Lecture, Session Keynote Lecture, Session Keynote Lecture, PF046, PF035, PF068	**Onsite Room: 3.01 (third floor), Salle 50 e RDC** **Zoom ID:** 869 8619 6467 **Password:** 090709
16:00-16:15	**Coffee Break**	
16:15-18:00	**Session 2: Cloud-Native Operations, Industrial Systems, and Intelligent Algorithms** Session Chair: Prof. Jalel Ben-Othman, University of Paris Est Créteil, France Session Keynote Lecture, Session Keynote Lecture, Session Keynote Lecture, PF069, PF071	**Onsite Room: 3.01 (third floor), Salle 50 e RDC** **Zoom ID:** 869 8619 6467 **Password:** 090709
18:00-20:00	**Dinner**	

Day 3, September 9, 2026, Wednesday, Central European Summer Time, GMT+2

Time	Schedule	
10:00-12:00	Keynote Speech Playback	**Zoom ID:** 869 8619 6467 **Password:** 090709

Session 1: Cybersecurity and Wireless Communication Systems

Time: 14:00-16:00, September 8, 2026, Tuesday, Central European Summer Time, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Session Chair: Prof. Jalel Ben-Othman, University of Paris Est Créteil, France

Session Keynote Lecture

14:00-14:25

Title: Securing Mobile Platforms Against Intelligent Malware: Emerging Threats and Future Directions
Session Keynote Lecturer: Farid Naït-Abdesselam, Université Paris Cité, France

Abstract: The widespread adoption of smartphones and mobile applications has made mobile platforms an essential part of today's digital ecosystem, while also turning them into attractive targets for increasingly sophisticated malware. Machine learning has emerged as a powerful approach for detecting and classifying such threats at scale. Yet, the growing reliance on learning-based detectors has introduced new vulnerabilities, as adversaries increasingly seek to manipulate both the detection process and the data on which these systems rely. This keynote explores the evolving landscape of mobile malware detection under intelligent and adaptive adversaries. It presents advances in learning-based detection and robust malware representation, and examines emerging threats ranging from adversarial evasion and data poisoning to AI-assisted malware manipulation. Particular attention is given to the growing role of large language models and generative AI in enabling more automated, adaptive, and stealthy attacks.
The talk also discusses defense mechanisms for improving the robustness of learning-based detectors and concludes with open challenges and future research directions toward resilient and trustworthy security solutions for next-generation mobile platforms.

Session Keynote Lecture

14:25-14:50

Title: Channel Modeling for Space-Aerial-Terrestrial Integrated Networks
Session Keynote Lecturer: P. Takis Mathiopoulos, University of Athens, Greece

Abstract: With the development of communication technologies, space-aerial-terrestrial (SAT) heterogeneous networks have emerged in the context of 6th-Generation (6G) communications. Incorporating various communication systems and devices, such as satellites and unmanned aerial vehicles (UAVs), they operate via complex and diverse communication links, which require accurate channel models. In this presentation we first review the developments and requirements of these communication links by focusing on the current state of research and challenges in channel modeling between such heterogeneous networks. To unify these methods, a general channel modeling approach is proposed by considering a SAT integrated network (SATIN). By introducing fictitious reference points at an altitude level of approximately 8km above the ground, SAT channels can be divided into upper- and lower-level channels. The advantage of this approach is that each channel can be modeled using different methods, while the complete channel impulse response can be obtained by convolving known data for the two channels thus allowing flexible utilization of existing channel models. Through a case study it will be shown that, by taking the measured path loss as a reference, the path loss generated by the proposed approach is more accurate than that obtained from the standard channel models.

Session Keynote Lecture

14:50-15:15

Title: STAR-RIS aided cell-free cognitive radio combined IoT networks: an efficient transmission scheme under insufficient power supply at RIS
Session Keynote Lecturer: Limeng Dong, Northwestern Polytechnical University, China

Abstract: To meet the massive data communication needs of 6G in the future, simultaneous transmitting and reflecting reconfigurable intelligent surface

(STAR-RIS) draws great attentions in the acdemic and history. Different form conventional RIS, STAR-RIS is capable of providing full-space signal coverage, and the quality of users' data transmission can be significantly improved by properly design the amplitude and phase in each electromagnetic element (EM) of RIS. Although STAR-RIS is a quasi passive device with wide application value in various types of wireless networks, most studies have not considered its power consumption issue. Once the power supply of RIS decreases due to external factors, it cannot support the normal operation of all EMs, resulting in a decrease in the improvement of user data communication performance. Hence, in this lecture, we consider a STAR-RIS enabled cell-free cognitive radio combined IoT network, and set the extreme scenario of insufficient power supply for RIS. In order to effectively improve the communication rate of primary and secondary users in the network, an effective system resource allocation algorithm under different channel state information conditions. In particular, a scheme based on optimal EM selection was proposed for RIS. Simulation experiments have verified that the algorithm can still effectively improve data communication performance compared to existing solutions under this special case of insufficient power.

PF046

15:15-15:30

Title: Detecting Cyber Threats in Smart Cities Using Artificial Intelligence: A Multi-Source and operationally aware framework
Authors: Zayed Almerekhi, MUSTAFA AL SAMARA, Abdelhak Belhi, Nabil Litayem, Bouziane BRIK
Presenter: Zayed al merekhi, Joaan bin Jassim academy for defence studies, Qatar

Abstract: Smart cities rely on interconnected digital infras-tructures, including Internet of Things (IoT), communication networks, and cyber-physical systems, to deliver critical services such as energy, transportation, and water management. However, this integration significantly expands the cyber attack surface, making these environments vulnerable to sophisticated and multi-source cyber threats. Detecting such threats is challenging due to data heterogeneity, limited labeled datasets, and dynamic operational behaviour. In this paper, we propose an Artificial Intelligence (AI)-based framework for detecting cyber threats in smart city environments using multi-source time-series data. The approach is based on a simulation-driven environment that models multiple urban zones and generates minute-level data across different service layers, including network traffic, authentication logs, IoT telemetry, and industrial control indi-cators. Various cyber attack scenarios are considered, includ-ing Distributed Denial of Service (DDoS), credential stuffing, SCADA manipulation, power grid attacks, and sensor spoofing. A machine learning-based detection model is developed using temporal feature engineering to capture dynamic and cross-layer correlations. Detection outputs are transformed into alerts and aggregated into incidents to align with Security Opera-tions Center (SOC) workflows. Experimental results show high detection performance (ROC-AUC = 0.999) and highlight the impact of decision thresholds on precision, recall, and false alarms. In addition, the framework incorporates operational Key Performance Indicators (KPIs), including Mean Time to Detect (MTTD), service uptime, incident volume, and risk distribution across zones. The results demonstrate that combining statistical metrics with operational indicators enables a more practical assessment of cybersecurity solutions in smart city environments, supporting early threat detection and improving infrastructure resilience.

PF035

15:30-15:45

Title: Method of deploying a post-quantum VPN into a corporate network
Authors: Gleb Shablakov, Alla Levina
Presenter: Gleb Shablakov, LETI Univeristy, Russia

Abstract: This paper overviews the current state of post-quantum (PQ) cryptography and its applicability within modern VPN protocols. The focus is on

a deployment-oriented method for selecting a software-supported hybrid VPN configuration for a specific corporate network segment. The method combines definition of operational TTLB thresholds, laboratory screening of post-quantum key-exchange candidates, construction of a hybrid configuration, and verification under target-segment conditions. The result should be interpreted as a practical selection and calibration procedure rather than as a new cryptographic primitive or a universal benchmark of post-quantum algorithms.

PF068

15:45-16:00

Title: Design and Performance Analysis of a Quasi-Cyclic LDPC-LoRa System for Reliable Transmission
Authors: Zi Shun Hou, Jian Mei Dai, Zhen Dao Wang, Zhao Ru Cheng, Quan Lin Li, Zhi Yong Shan
Presenter: Zi Shun Hou, Space Engineering University, China

Abstract: Low Earth Orbit (LEO) satellite LoRa communication systems feature outstanding advantages including low terminal power consumption, low hardware cost and high system access capacity. They have become a typical application paradigm for LEO satellite Internet of Things (IoT) and possess important application value in satellite communications. Nevertheless, the system is vulnerable to the combined effects of space environment interference and human induced interference, which causes severe degradation of satellite ground link quality and limits stable system operation under complex scenarios. Targeting the research scope of physical layer optimization for LEO satellite LoRa communication systems, this paper addresses the poor reliability issue of conventional Hamming coding systems. With the explicit research objectives of improving system transmission reliability and optimizing long packet transmission performance, a LoRa physical layer optimization scheme based on Low Density Parity Check (LDPC) codes is proposed. The core innovation of the proposed scheme is that LDPC coding combined with the LLR BP decoding algorithm is adopted to replace Hamming codes. While fully preserving compatibility with core LoRa parameters such as CSS modulation scheme and spreading factor (SF), the interleaving procedure is removed. This improves not only the system bit error rate performance but also the adaptability to long data packet transmission. Simulation results demonstrate that the proposed scheme achieves a coding gain up to 1.5 dB compared with the traditional LoRa system under identical code rate conditions. The research outcomes provide important theoretical basis and engineering reference for the optimization, upgrading and large scale deployment of LEO satellite LoRa communication systems.

Onsite Session 2: Cloud-Native Operations, Industrial Systems, and Intelligent Algorithms

Time: 16:15-18:00, September 8, 2026, Tuesday, Central European Summer Time, GMT+2
Onsite Room: 3.01 (third floor), Salle 50 e RDC
Session Chair: Prof. Jalel Ben-Othman, University of Paris Est Créteil, France

Session Keynote Lecture

16:15-16:40

Title: Cyber-Physical Systems as the Foundation of Industry 5.0: Enabling Human-Centric, Resilient, and Sustainable Smart Manufacturing
Session Keynote Lecturer: Anand Nayyar, Duy Tan University, Vietnam

Abstract: Cyber-Physical Systems (CPS) play a crucial role in the transformation from Industry 4.0 to Industry 5.0 by integrating computation, communication, sensing, and physical processes into intelligent industrial environments. While Industry 4.0 emphasizes automation, connectivity, and data-driven production, Industry 5.0 extends these capabilities by focusing on human-centricity, sustainability, and resilience. This study explores how CPS enables the development of adaptive, collaborative, and intelligent manufacturing systems that support effective human–machine interaction and real-time decision-making. By connecting machines, sensors, digital platforms, and human operators, CPS provides the technological foundation for flexible production, predictive maintenance, resource optimization, and personalized manufacturing. The paper also discusses the opportunities and challenges associated with CPS adoption in Industry 5.0, including cybersecurity, interoperability, data governance, system complexity, and workforce readiness. The findings highlight that CPS is not only a technical enabler but also a strategic driver for building future industrial systems that are more efficient, sustainable, resilient, and aligned with human values.

Session Keynote Lecture

16:40-17:05

Title: On the complementarity between large-scale optimization and reinforcement learning Case study: Segment Routing in Optical Networks
Session Keynote Lecturer: Brigitte Jaumard, Concordia University, Canada

Abstract: Over the past decades, the combination of hardware and algorithmic improvements yielded massive speed-ups inlarge scale optimization. On the other hand, machine learning (ML), and in particular Reinforcement Learning, has taken an amazing journey in the last decade. While large scale optimization and mathematicalprogramming algorithms excel at exploiting models, reinforcement learning performs well in model prediction. Then, how can they help each other solving dynamic large scale problems? Mathematical programming and reinforcement learning serve different purposes in optimization. Mathematicalprogramming is a traditional approach that uses mathematical equations to model and solve optimizationproblems. It is often used for problems with well-defined objectives and constraints. Reinforcement learning, onthe other hand, is a more dynamic and adaptive approach that uses trial and error to learn and improve overtime. It is particularly useful for problems with complex, non-linear objectives and where the environment is notfully known. In terms of how they can help each other, mathematical programming can provide the theoreticalframework and constraints for reinforcement learning to operate within. Reinforcement learning can then use this framework to learn and improve decision-making processes, potentially leading to more efficient and effective solutions to optimization problems. In other words, the combination of these two approaches can leadto more robust and scalable optimization solutions that can handle the complexities of real-world problems. We will explore this new paradigm combining mathematical programming and reinforcement learning. We willillustrate it with segment routing in optical networks, which is now widespread thanks to a simplified controlplane and increased scalability to meet the evolving traffic needs of 6G and beyond.

Session Keynote Lecture

17:05-17:30

Title: Is matrix neural network the alternative of convolutional neural network?
Presenter: Loc Nguyen, Loc Nguyen's Academic Network, Vietnam

Abstract: Currently, deep learning is the most important and popular methodology in artificial intelligence (AI) and artificial neural network (ANN) is the foundation of deep learning. The main drawback of ANN is the boom problem of a huge number of parametric weights when ANN in deep learning establishes a large number of hidden layers. The excellent solution for image processing within context of deep learning is convolutional neural network (CNN) equipped filtering kernel. Another solution of the boom problem is that large parametric weight vector is organized as matrix, which leads to a so-called matrix neural network (MNN). Computation cost of MNN is decreased significantly in comparison with ANN but it is necessary to test the main hypothesis “whether MNN is the alternative of CNN”. Moreover, transformer which is the new trend in AI and deep learning, which aims to improve/replace traditional ANN by self-supervised learning, in which attention is the significant mechanism of self-supervised learning. Therefore, the implicit deep meanings of attention and filtering kernel are similar, which represents feature of data, which does not go beyond parametric weights too. In general, the research has two goals: 1) explaining and implementing ANN, CNN, and transformer (attention) and 2) applying analysis of variance (ANOVA) into evaluating the effectiveness of ANN, CNN, and transformer (attention) within context of image classification. The ultimate result is that it is not asserted that MNN is the alternative of CNN but MNN can be an optional choice for implementing ANN instead of focusing on the unique CNN solution. Moreover, the incorporation of MNN and attention in implementing transformer produces a compromising solution of high performance and computational cost.

PF069

17:30-17:45

Title: Achieving True Zero-Downtime Kubernetes Deployments: A Statistically Rigorous Comparison of Blue-Green, Canary, Rolling, and Recreate Strategies
Author: Rao Shruti Mohankumar, B. Thangaraju
Presenter: Rao Shruti Mohankumar, International Institute of Information Technology Bangalore, India

Abstract: Zero-downtime deployment is a fundamental requirement for continuously delivered microservice applications,while the empirical evaluation of client-observable effects of Kubernetes deployment strategies remains largely unexplored. We experimentally compare four deployment strategies: applicationlayer Blue-Green and Canary switching, and the natively supported Rolling Update and Recreate deployment controllers by using an identical five-service containerized application deployed on the stable three-node Kubernetes cluster. Each strategy was evaluated over ten independent, randomly ordered experimental runs using an open-loop, coordinated-omission-aware workload generator (wrk2) and a microsecond-resolution, perresponse downtime measurement framework. The results were statistically analyzed by bootstrap 95% confidence intervals, the Kruskal–Wallis test, Holm–Bonferroni correction of the Mann–Whitney U test, and Cliff’s delta effect size measures. The Recreate deployment served as a negative control, producing a
median downtime of 2.72 s and providing confirmation of the validity of the measurement framework. On the other hand, Blue-Green and Canary deployments achieved zero measured downtime (0.0 ms) and zero HTTP errors through the application Layer atomic proxy switching, while Rolling Update deployment,even with maxUnavailable = 0, exhibited a small but statistically significant structural downtime (median 10 ms). These findings demonstrate that achieving zero measured downtime through application-layer traffic switching requires additional resource overhead. The complete benchmarking framework, orchestration scripts and statistical analysis pipeline

are publicly available.

PF071

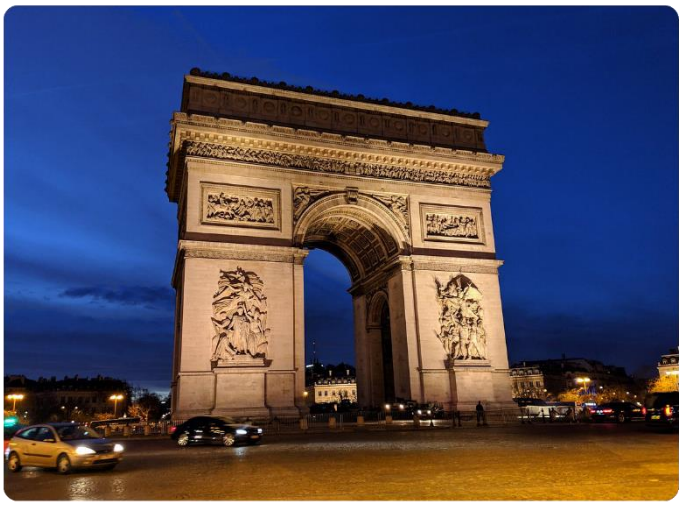
17:45-18:00

Title: Zero-Downtime Blue-Green Deployment for Containerised Microservices: A Statistically Rigorous Empirical Comparison of Kubernetes Release Strategies

Authors: Deeksha Jain, B.Thangaraju
Presenter: Deeksha Jain, International Institute of Information Technology Bangalore, India

Abstract: Continuous delivery forces teams to swap out running versions of live microservices while user traffic is still arriving, yet very few studies report what a client actually loses during that swap. We build an automated, health-gated blue-green deployment pipeline for a five-service containerised application on Kubernetes. The pipeline is written entirely asdeclarative Ansible roles and finishes with a single atomic switch of an Nginx Ingress backend, and we pit it against the Rolling Update, Recreate and Canary strategies. Instead of inferring an outage from an error-rate proxy, we timestamp every individual response at the load generator and define downtime as the single longest unbroken run of failed requests under a fixed workload of 100 requests per second, repeated across fifteen randomised trials for each strategy. Blue-green records the smallest downtime of the four approaches, with a median of 0 ms, a filtered mean of 410 ms and a bootstrap 95 % confidence interval of [122, 762] ms. More telling than the mean is a Cliff's delta of −1.000 against every competitor, which means the two distributions do not overlap at all. A three-part observability stack of Prometheus, Grafana and Jaeger substantiates each claim, and an observability-triggered rollback restores a deliberately broken release with a measured mean time to detect of 3.45 s and a mean time to recover of 6.04 s. Because Prometheus logged zero application-level 5xx responses across all runs, the residual client-side failures are transient network resets during the reload rather than server faults.

Paris



Paris, the heart of France, is a romantic capital woven together by art, fashion, and light. The Seine River flows with millennia of cultural heritage, while Left Bank cafés once hosted the philosophical reflections of Sartre and Beauvoir. The smile of the Mona Lisa and the armless Venus in the Louvre quietly tell legendary tales of art. The Impressionist treasures at the Musée d'Orsay and the modern edge of the Centre Pompidou highlight its status as a global art hub.

Strolling through Montmartre, street artists' brushes complement the dome of the Sacré-Cœur Basilica; the ancient lanes of Le Marais hide independent galleries and vintage boutiques, and the Eiffel Tower shimmers like crystal under the night sky. The beauty of Paris lies both in the skyline punctuated by Gothic spires and the buttery aroma of croissants from corner bakeries—a jewel of human civilization that forever invites wandering, contemplation, and savoring.

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Memo