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Organizor

浙江理工大學 ZHEJIANG SCI-TECH UNIVERSITY

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Lecture Notes in Computer Science LNCS LNAI LNBI

Driven by advancements in areas such as artificial intelligence, distributed systems, autonomous intelligent systems, and cyber-physical systems, complex computer systems increasingly shape every aspect of human life, from manufacturing and communications to healthcare, defense, transportation, and energy, the demand for advanced methodologies and tools is growing. These systems are often distributed over heterogeneous networks, leveraging vast amounts of data, emerging artificial intelligence (AI), and machine learning techniques. Recent trends, including the rise of large language models (LLMs) and embodied intelligence, have introduced additional challenges and opportunities in the engineering of such systems. The complexity of modern systems arises from dynamic operating environments, diverse functional requirements, and conflicting needs such as performance, scalability, security, dependability, and adaptability. These challenges are compounded by factors like real-time behavior, fault tolerance, robustness, and long-term sustainability, making the engineering of these systems a multidisciplinary effort.

The 29th International Conference on Engineering of Complex Computer Systems (ICECCS 2025) is a well-established event that has been held around the world for over 27 years. It aims to bring together experts from industry, academia, and government to exchange ideas on the engineering of these intricate systems. ICECCS 2025 will be held 2-4 July 2025 in Hangzhou, China. We encourage contributions that tackle both theoretical and practical challenges, from long-term research agendas to near-term industry needs.

Topics of Interest

We welcome submissions in a wide range of topics related to complex computer systems, including but not limited to:

Requirements, Modeling and Formal Methods

- Requirements analysis and specification
- Model-driven development
- Model checking
- SAT/SMT solvers for software analysis and testing

Complex Systems Design and Architecture

- Modeling, designing, and managing complex computer systems
- Software and system architecture for large-scale systems
- Engineering adaptive and resilient systems with dynamic requirements
- Cross-discipline integration and system-level optimization techniques
- Integration of emerging technologies (e.g., quantum computing, blockchain) into complex system design

Software Engineering

- Verification and validation
- Reverse engineering and refactoring
- Human Machine Interaction
- Agile methods
- Software supply chain of complex systems

Simulation, Testing, and Validation

- Advanced simulation techniques for complex systems
- Digital twins and virtual testing environments for complex systems
- Simulation-driven development and validation methodologies for complex systems
- Simulation-based testing for complex systems
- Benchmarking and Test Suites

Security, Reliability and Dependability

- Safety-critical and fault-tolerant architectures
- Formal methods
- Security and privacy of complex systems
- Privacy-preserving AI
- Fairness

Large Language Models (LLMs) and AI-driven Systems

- Safety, security, reliability, and robustness of LLMs and AI systems
- Integration of LLMs within complex systems
- Applications of LLMs to complex systems
- Scalability, performance, and efficiency optimization for AI-driven systems
- Trustworthiness and explainability of AI and LLMs in critical applications
- Engineering AI-based systems for human-AI collaboration and interaction
- AI4SE and SE4AI
- LLM-based Agents

Embodied Intelligence and Autonomous Intelligent Systems

- Design and validation of autonomous systems, such as robotics and autonomous driving
- Perception, decision-making, and planning modules in autonomous systems
- Simulation-based testing and validation of autonomous systems
- Robustness, fault tolerance, and safety challenges in autonomous operations
- Interoperability and coordination between autonomous systems in distributed environments
- AI and ML techniques for autonomous systems

Realistic Complex Systems

- Modern Operating Systems
- Ubiquitous computing, context awareness, sensor networks
- Cyber-physical systems and Internet of Things (IoT)
- Autonomous driving systems and robotic systems
- Industrial case studies

Different kinds of contributions are sought, including novel research, lessons learned, experience reports, and discussions of practical problems faced by industry and user domains. The ultimate goal is to build a rich and comprehensive conference program that can fit the interests and needs of different classes of attendees: professionals, researchers, managers, and students. A program goal is to organize several sessions that include both academic and industrial papers on a given topic and culminate panels to discuss relationships between industrial and academic research.

Submission and Publication

ICECCS 2025 accepts both full papers and short papers.

- Full papers are divided into two categories: Technical Papers and Experience Reports. The papers submitted to both categories will be reviewed by the program committee members, and papers accepted in either category will be published in the conference proceedings. Technical papers should describe original research, and experience reports should present practical projects carried out in the industry, and reflect on the lessons learnt from them.
- Short paper submissions describe early-stage, ongoing or PhD research. All short papers will be reviewed by the program committee members, and accepted short papers will be published in the conference proceedings.

Submissions to the conference must not have been published or be concurrently considered for publication elsewhere. All submissions will be judged on the basis of originality, contribution to the field, technical and presentation quality, and relevance to the conference.

Proceedings will be published by Springer in the Lecture Notes in Computer Science (LNCS). Submitted manuscripts should be in English and formatted in the style of LNCS format. Full papers should not exceed 20 papers (including bibliography, etc.), and short papers should not exceed 11 pages (including bibliography, etc.). All submissions should be in PDF format. Submissions not adhering to the specified format and length may be rejected immediately without review. Please prepare your manuscripts in accordance with the Springer LNCS guidelines: https://www.springer.com/gp/computer-science/lncs/conference-proceedings-guidelines

We invite all prospective authors to submit their manuscripts via the ICECCS 2025 portal, hosted by the EasyChair conference management system: https://easychair.org/conferences/?conf=iceccs2025.

Important Dates

- Abstract Submissions Due: 28 January 2025 AoE
- Full Paper Submissions Due: 4 February 2025 AoE
- Acceptance/Rejection Notification: 4 April 2025 AoE
- Camera-ready Due: 2 May 2025 AoE
- Author Registration Deadline: 2 May 2025 AoE
- Conference Dates: 2-4 July 2025 (UTC +8)