

# CPSAT 2024

October 16-17

Institute for Research in Fundamental Sciences (IPM)

School of Computer Science

**General Chair:** Dr. Pejman Lotfi-Kamran (IPM)

**Program Chair:** Dr. Hamid Reza Zarandi (Amirkabir University of Technology)

**Financial Chair:** Dr. Amir Mahdi Hosseini Monazzah (Iran University of Science & Technology)

**Industrial Relation Chair:** Dr. Mahsen Ansari (Sharif University of Technology)

**Web and Internet Chair:** Dr. Sepideh Safari (IPM)

**Publication Chair:** Dr. Paria Darbani (IPM)

**Workshop Co-chair:** Dr. Mahmood Momtazpour (Amirkabir University of Technology)

**Workshop Co-chair:** Dr. Mahmood Shirazi (Institute for Advanced Studies in Basic Sciences (IASBS))

**Publicity Chair:** Dr. Bardia Safaei (Sharif University of Technology)

**Executive Chair and Local Arrangement:** Hamid Reza Shahrabi (IPM)

**Secretary:** Yousef Mehrabani (IPM)

## CALL FOR PAPERS

The 2024 International Symposium on Cyber-Physical Systems (Applications and Theory) (CPSAT 2024), aims at bringing researchers in the fields of Cyber-Physical Systems (CPS), embedded and real-time systems, Internet-of-Things (IoT), and related research areas, from both industry and academia. This event was held nationally from 1995 to 2014. Starting from 2015 (visit <http://cpssi.ir/rtest>) CPSAT (formerly RTEST) became a successful international symposium. CPSAT 2024 will be held on October 16-17, at Institute for Research in Fundamental Sciences (IPM), Tehran, Iran.

**PLEASE NOTE:** CPSAT 2024 solicits original papers that have not been published or submitted for publication elsewhere. Extended versions of the accepted papers will also be considered for publication in **Scientia Iranica Transactions on Computer Science & Engineering and Electrical Engineering**. Submissions may include all theoretical and application oriented areas, reporting modeling, design, analysis, implementation, evaluation and empirical experiments related to CPS, embedded systems, real-time systems, and IoT, including (but not limited to) the following tracks:

### Track A: CPS Design and Analysis

#### Design, Implementation and Analysis of Digital Systems in CPS

Hardware architectures, memory hierarchies, FPGAs, CPU/GPUs and AI accelerators

System-level design, design space exploration, synthesis, co-design techniques

Human-machine interactions, sensors and actuators

Foundations of CPS/IoT, design models, simulation/emulation for CPS/IoT

Emerging embedded systems

#### Embedded Software/Hardware

Embedded and real-time operating systems

Hypervisors and runtime frameworks

Specification languages, requirements, compilers and tools

Middleware and firmware, Bioinformatic embedded applications

Autonomous computing in CPS

#### Optimization, Control and Resource Planning in CPS

WCET analysis

Scheduling and resource allocation

Energy and temperature management

System-level optimization and control

Performance analysis of CPS/IoT

### Track B: Distributed/Dependable CPS

#### Communications and Protocols in CPS

CPS/IoT communications, infrastructure and network applications

Networked/distributed real-time/embedded systems, sensor networks

Mobile CPS applications, connected vehicles

Time-sensitive applications and networks

Cloud, edge, and fog computing

Blockchain, consensus algorithms in CPS

#### Verification and Validation of CPS

Safety and resilience in CPS/IoT

Dependable CPS design

Cyber security, privacy and trust in CPS, encryption/decryption techniques

#### CPS Applications and Frameworks

CPS/IoT applications in power and control systems, grid computing

Advanced Metering Infrastructures (AMI) and benchmarking

Software platforms, simulators, and emulators for CPS/IoT

Intelligent transportation, energy, healthcare, aerospace, smart city and smart grid

Industry 4.0, digitalization, industry best practices

### Track C: Artificial Intelligence in CPS

#### AI Applications in CPS

Theory/Applications of machine learning, real-time AI, NLP, explainable AI,

neuromorphic computing, evolutionary computing in CPS

#### CPS for Smart Processing

Application of CPS in computer vision and image understanding, hybrid

intelligent systems, knowledge-based systems, knowledge representation,

robotics and automation



#### Important Dates:

**Full Paper Submission:**

June 20th, 2024

**Author Notification:**

August 23th, 2024

**Camera-Ready:**

September 6th, 2024

Scan for more info

