

# 11<sup>th</sup> ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS 2020)

Sydney, Australia

22<sup>ND</sup> – 24<sup>TH</sup> APR 2020

The 11th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS 2020) will be held on April 22-24, 2020 in Sydney, Australia as part of CPSWeek 2020. <http://iccps.acm.org/2020>

**Overview:** As computing and communication become faster, cheaper, and available in packages that are smaller and use less power, these capabilities are increasingly embedded in many objects and structures in the physical environment. Cyber-physical systems (CPS) are physical and engineered systems whose operations are monitored, coordinated, controlled, and integrated by computing and communication. Broad CPS deployment is transforming how we interact with the physical world as profoundly as the world wide web transformed how we interact with one another, and further harnessing their capabilities holds the possibility of enormous societal and economic impact.

ACM/IEEE ICCPS is the premier single-track conference for reporting advances in all CPS aspects, including theory, tools, applications, systems, test-beds and field deployments. The conference focuses on the core science to develop fundamental principles that underpin the integration of cyber and physical elements, as well as on the development of technologies, tools, architectures and infrastructure for building CPS systems, highlighting the design, implementation, and investigation of CPS applications. Application domains include (but are not limited to): transportation, energy, water, agriculture, medical and assistive technology, sensor and social networks, robotics, smart cities, ecology, and supply-chains. Among the relevant research areas are security, control, optimization, machine learning, game theory, mechanism design, mobile and cloud computing, model-based design, verification, data mining / analytics, signal processing, and human-in-the-loop shared or supervisory control.

**Submissions:** All submissions must be in English. Only original papers that are not submitted or published in other conferences or journals will be considered. ICCPS 2020 will employ a *light-weight double-blind* reviewing for submitted papers requiring adherence to two rules: (i) authors names and institutions must be omitted; and (ii) reference to authors' own related work should be in the third person. Manuscripts should have a main body with no more than 10 pages. Up to 2 additional pages of appendices may follow the main body of the paper, within the same submitted .pdf file. The paper must be in the same format as that in the final published proceedings (minus author information). It shall use the IEEE two-column conference style, US Letter (8.5 inch x 11 inch) paper size, and 10pt text font size.

## Call for Papers

### GENERAL CHAIRS

Linda Bushnell (Univ. of Washington)  
Miroslav Pajic (Duke Univ.)

### TPC CHAIRS

Martina Maggio (Lund Univ.)  
James Weimer (Univ. of Pennsylvania)

### DEMO/POSTER/WIP CHAIR

Yasser Shoukry (Univ. of Cal., Irvine)

### PUBLICITY CHAIRS

Europe: Selma Saidi (Hamburg Univ.)  
Asia/Australia: Bai Xue (Chinese Acad. of Sci.)  
North America: Na Li (Harvard Univ.)

### WEB CHAIR

Renato Mancuso (Boston Univ.)

### STEERING COMMITTEE

Insup Lee, Chair (Univ. of Pennsylvania)  
Jack Stankovic (Univ. of Virginia)  
Eric M. Feron (Georgia Inst. of Tech.)  
Karl H. Johansson (KTH Royal Inst. of Tech.)  
Xenofon Koutsoukos (Vanderbilt Univ.)  
Raj Rajkumar (Carnegie Mellon Univ.)  
Xue Liu (McGill Univ.) – Ex Officio  
Paulo Tabuada (UCLA) – Ex Officio

### IMPORTANT DATES

Paper submission: 23 October 2019  
Decision notification: December 2019  
Camera-ready submission: January 2020  
Conference: 22<sup>nd</sup> – 24<sup>th</sup> April 2020



# IPSN 2020

APRIL 21-24, 2020  
SYDNEY, AUSTRALIA

THE 19TH ACM/IEEE INTERNATIONAL CONFERENCE ON  
INFORMATION PROCESSING IN SENSOR NETWORKS  
[HTTPS://IPSN.ACM.ORG/2020](https://ipsn.acm.org/2020)



IPSN is the leading annual forum on research at the intersection of networked embedded sensing, control, and systems design, and has been at the forefront of the development of today's "smart" systems. IPSN brings together researchers across theoretical and experimental research on all aspects of networked systems of sensors and actuators. Of special interest are contributions at the confluence of multiple areas. IPSN 2020 continues its co-location with CPS-IoT WEEK, the premier venue for research and development of cyber-physical systems. IPSN is co-sponsored by both the ACM and IEEE, and emphasizes research that bridges multiple research communities. Topics of interest include, but are not limited to:

- Sensor data storage, retrieval, processing
- Coding, compression, & information theory
- Theoretical foundations & bounds
- Network & system architecture & protocols
- IoT gateway platform arch. & services
- Outdoor, wide-area, or crowdsourced sensing systems
- Localization, synchronization, RFID, and RF sensing
- Programming models, languages, & systems
- Programming models for IoT ensembles
- Modeling, simulation & measurement tools
- Operating systems & runtime environments
- Appls. in health, wellness & sustainability
- Appls. in smart cities and urban health
- Experiences, challenges, comparisons
- Discovery, coordination, & IoT services
- Security and privacy
- IoT reliability, adaptability, & dependability
- Technical assessment of IoT standards
- Wearable systems & data processing algs.
- Sensor-enabled drone / autonomous vehicle platforms and algorithms
- Machine & deep learning on sensor data
- New hardware and system design to enable machine learning on sensor data
- Novel embedded ML algorithms
- Data issues: methods, tools, & analysis
- Fairness, equity, & transparency issues in IoT and CPS
- Computer vision for resource-constrained & mobile platforms

In addition to the *Best Paper Award*, IPSN 2020 will also have a *Best Research Artifact Award*, given to the authors who have contributed the research artifact (such as code, data sets, and tools). Submissions are double-blind, 12 pages including references in ACM master format.



Abstract Registration: 16 October 2019  
Paper Submission Deadline: 23 October 2019  
Acceptance Notification: 10 January 2020  
Camera-Ready Deadline: 16 February 2020



Association for  
Computing Machinery

# RTAS 2020 CFP

CPS-IoT Week Sydney Australia 21-24, April, 2020



RTAS is a top-tier conference with a focus on systems research related to embedded systems or timing issues. The broad scope of RTAS'20 ranges from traditional hard real-time systems to embedded systems without explicit timing requirements, including latency-sensitive systems with informal or soft real-time requirements.

RTAS'20 invites papers describing original systems and applications, case studies, methodologies, and applied algorithms that contribute to the state of practice in the design, implementation, verification, and validation of embedded systems and time-sensitive systems (of any size). The scope of RTAS'20 consists of two tracks:

1. Real-Time/Embedded Systems: Applications, Operating Systems, Run-Time Systems, Tools and Hardware Architectures
2. Real-Time Applied Methodologies and Foundations.

Timing requirements of interest include not only classical hard real-time constraints, but also time-sensitive applications in a broader sense, including applications subject to probabilistic, soft real-time, quality-of-service (QoS), or latency requirements. For example, relevant application areas include (but are not limited to):

- time-sensitive cloud/edge/fog computing systems (e.g., characterized by a focus on tail latency);
- time-sensitive applications in the Internet of Things (IoT);
- time-sensitive distributed event processing systems;
- time-sensitive mobile computing apps;
- timing aspects in robotics middlewares and frameworks;
- machine learning in or for time-sensitive systems;
- real-time control in smart cities and other large cyber-physical systems (CPS);
- signal processing algorithms that must execute in real time; and
- real-time healthcare solutions.

## Important Dates:

Submissions: 23 October 2019

Author Rebuttal: 27-29 November 2019

Notifications: 11 December, 2019

Conference Website: <http://2020.rtas.org/>

## ICFC 2020 CFP

### CPS-IoT Week Sydney Australia 21-24, April, 2020



Fog computing is the extension of cloud computing into its edge and the physical world to meet the data volume and decision velocity requirements in many emerging applications, such as augmented and virtual realities (AR/VR), cyber-physical systems (CPS), intelligent and autonomous systems, and mission-critical systems. The boundary between powerful centralized cloud and massively distributed, Internet connected sensors, actuators, and “things” is blurred in this new computing paradigm.

The 2020 IEEE International Conference on Fog Computing (ICFC 2020), colocated with the CPS IoT Week in Sydney, April 21-24, 2020, brings together researchers and practitioners across academia, industry, and governments to exchange visions, technical challenges, and research outcomes in a single forum. ICFC takes a broad view of Fog Computing, including computation, connectivity, mobility, sensing and actuation, theories, and systems.

#### **ICFC topics of interest include but are not limited to:**

- System architecture for fog computing
- Coordination between cloud, fog, and sensing/actuation endpoints
- Connectivity, storage, and computation in the edge
- Data processing and management for fog computing
- Efficient and embedded AI in the fog
- System and network manageability
- Middleware and coordination platforms
- Power, energy, and resource management
- Device and hardware support for fog computing
- Programming models, abstractions, and software engineering for fog computing
- Security, privacy, and ethics issues related to fog computing
- Theoretical foundations and formal methods for fog computing systems
- Applications and practical experiences

#### **Important dates**

- Submission registration and abstract: **October 16, 2019 (abstract registration)**
- Full paper submission: **October 23, 2019**
- Acceptance notification: **January 20, 2020**
- Camera ready: **March 30, 2020**

# IoTDI'2020

## 5th ACM/IEEE International Conference on Internet of Things Design and Implementation

April 21-24, 2020 – CPS-IoT Week – Sydney, Australia

<https://conferences.computer.org/iotDI/2020/>

ACM/IEEE IoTDI is the premier venue for all topics related to the Internet of Things. The conference is an interdisciplinary forum to discuss challenges, technologies and emerging directions in system design and implementation that pertain to IoT.

Papers are solicited on a range of topics, including but not limited to:

- Analytic foundations and theory of IoT
- Reliability, security, timeliness, and robustness in IoT systems
- Novel protocols and network abstractions
- Data streaming architectures and data analytics for IoT
- AI/ML for IoT & embedded systems
- IoT-motivated cyber-physical and Industrial IoT (IIoT) systems
- Novel quality requirements and their enforcement mechanisms
- Cloud back-ends and resource management for IoT applications
- Edge and fog computing
- Personal, wearable, and other embedded networked front-ends
- Social computing and human-in-the-loop issues
- Applications for specific domains (smart cities, health, ITS, ...)
- Deployment experiences, case studies & lessons learned
- Evaluation and testbeds
- Energy/power management & harvesting for IoT platforms

Accepted papers of particular merit will be invited to submit an extended version to the *ACM Transactions on the Internet of Things* (TIOT).

### General Chairs

Gian Pietro Picco (University of Trento, Italy)  
Prashant Shenoy (UMASS, Amherst, USA)

### Program Chairs

Valerie Issarny (INRIA, France)  
Archan Misra (SMU, Singapore)

### Steering Committee Chairs

Tarek Abdelzaher (UIUC, USA)  
Hui Lei (IBM Watson Health Cloud, USA)

### Poster & Demo Chairs

Christopher Stewart (Ohio State Univ., USA)  
Rui Tan (Nanyang Tech. Univ., Singapore)

### Publicity Chairs

Josiah Hester (Northwestern Univ., USA)  
Oana Iova (INSA Lyon, France)  
Feng Lin (Zhejiang Univ., China)

### Social Media Chair

Tian Guo (Worcester Polytechnic Inst., USA)

### Web Chair

Stephen Lee (University of Pittsburgh, USA)

### Important Dates

**Abstracts due:** October 16, 2019

**Full papers due:** October 23, 2019

**Author notification:** January 15, 2020