



Welcome to the 2025 Symposium on IoT (SloT)

Navigate the forefront of IoT research through stimulating discussions led by renowned scholars and researchers. Gain invaluable insights from top researchers and scholars as they unveil the latest advancements in IoT technology. The 2025 SloT is supported by FBloT, SBMicro, SBA, SBC, SBIAgro, SBrt, EDS/IEEE and CPTEen.

The primary purpose of the International Symposium on the Internet of Things (SloT) is to bring together professionals and students working in the multidisciplinary area of the Internet of Things (IoT), presenting, and discussing their work, results, and applications. The event aims to attract people from different Brazilian states and other countries, as well as members of academia, research institutes, government, and business sectors.

This year, SloT 2025 will be held in cooperation with LABCIoT from October 14th to 16th in Campinas, SP. The Symposium will focus on recent research results in the area, and the joint action between SloT and LABCIoT will bring synergy between applications, markets, opportunities, programs, and government actions. This integration of the two events represents a unique opportunity. It combines the most significant technical and scientific societies in the IoT area, allowing for more significant interaction between the academic, research, and industry communities. This, in turn, is constructive for the training and professional vision of undergraduate and postgraduate students and professionals working in the market.

There will be a call for regular papers with oral presentations and publication in the IEEE/Xplore platform. There will also be a call for summary works to give space for undergraduate, master's, and doctoral students to present their ideas and ongoing results, which is also essential for their training.

Seize the opportunity to participate in this extraordinary event - submit your scientific contributions to 2025 SloT, secure your spot, and immerse yourself in the wonders of Campinas and UNICAMP as you explore the future of IoT!

Beside the scientific, technology and business insights of the event, Campinas has also touristic and historical attractions. Campinas was home of great inventors such as Hercule Florence (photography), Roberto Landell de Moura (radio), Santos-Dumont (airplane) and also of the great composer Carlos Gomes. It hosts important academic and R&D; centers, as examples for microelectronics we mention UNICAMP, CTI, CPqD, CNPEM (LNNano, LNLS, Sirius), Eldorado and many others. There are also many tourist attractions such as Portugal Park, Municipal Market, Old Train Station, the Cathedral, the touristic old train trip Maria Fumaça and a nearby touristic city of Holambra.

Important Dates - SloT

- Paper submission: July 14th, 2025
- Author notification: September 12th, 2025
- Camera-Ready deadline: September 20th, 2025

PAPER SUBMISSION LINK:

Submissions will be peer-reviewed and evaluated based on quality, relevance to conference, and originality. Accepted papers will be submitted for inclusion into SloT 2025 Conference Proceedings at IEEE Xplore.

Link → <https://cmt3.research.microsoft.com/SloT2025>

SloT 2025 co-located with LABCIoT 2025:

SloT 2025 will be held in parallel with the Latin America and Brazilian Congress on IoT 2025 (LABCIoT 2025), to be organized in the same location by the Brazilian IoT Forum and University of Campinas – UNICAMP, at Campinas-SP..’

PROGRAM:

2025 SloT – October 14 th -16 th , 2025		
October 14 th		
Schedule	AUDITORIUM I	AUDITORIUM II
8:30 - 9:00	OPENING SESSION (AUDITORIUM III)	
9:00 - 9:45	Keynote Speech (AUDITORIUM III) – Panorama Internacional (IoT no Brasil e no Mundo) Keynote Speaker: Marcelo Zuffo – Inova.USP Keynote Chair: C. Violato – FBloT	
Coffee Break		
10:00 - 12:15	Session 1: Smart Cities (1)	Session 2: Healthcare
10:00 - 10:20	Microstrip Patch Antenna Design with Metamaterial as Reflector for 5G Applications in Automotive Systems: Electromagnetic Simulation Approach	An IoT System for Monitoring the Quality of Vaccines in the Storage Chain
10:20 - 10:40	Spatial Aggregation of IoT Data in Sustainable Mobility scenarios	On-Device KWS and Speaker Recognition System for Discreet Emergency Assistance on Android
10:40 - 11:00	MetroBESS Analytics – A Tool for Regenerative Energy Analysis and BESS Sizing in Urban Rail Systems: A Case Study on the Recife Central Line	Socially Aware Design for the Internet of Human Things
11:00 - 11:20	Remote Management in Public Lighting - The Experiment at Unicamp Campus	Embedded Joint Kinematics Estimation via Smart Insoles for Decentralized IoT Gait Monitoring
11:20 - 11:40	Predicting E-Bus Energy Consumption Using AIoT	IoT for Diving Support: Development of a Prototype for Water Temperature Monitoring
11:40 - 12:00	Assessing IoT devices for altitude monitoring: Impacts on BEB Energy Consumption Estimation	Edge AI Smart Cane for Real-Time Indoor Localization and Vision-Based Obstacle Detection
Lunch		
13:45 - 14:30	Keynote Speech (AUDITORIUM III) – Impactos da IoT na Indústria Aeronáutica: Case EMBRAER Keynote Speaker: Giuliano Mendonça – EMBRAER Keynote Chair: P. Cabestré – FBloT	
14:30 - 16:00	Session 3: Industry and Energy (1)	Oficinas com alunos do ensino médio
14:30 - 14:50	Tiny machine learning for real-time defect detection on metallic surfaces	
14:50 - 15:10	Integrated Circuit Design for Fast TDR Pulse Generator Using CMOS 180nm Technology Embedded in Photovoltaic Modules	
15:10 - 15:30	Joint PB Placement and Beamforming Design for IoT Energy Transfer via Evolutionary Algorithms	
15:30 - 15:50	AI-Driven Optimization of Power Beacon Placement and Charging Scheduling in WET Systems	
Coffee Break		
16:15 - 17:00	Session 3: Industry and Energy (1) (Cont.)	Oficinas com alunos do ensino médio (Cont.)
16:15 - 16:35	Drone Fault and Maneuver Direction Classification Using Deep Neural Networks in Multitask Learning	
16:35 - 16:55	Local Detection with Low Computational Cost of Faults in Rotating Machine Bearings	

PROGRAM:

October 15 th		
Schedule	AUDITORIUM I	AUDITORIUM II
9:00 - 9:45	Keynote Speech (AUDITORIUM III) – IoT Technology Spectrum: From Sensor Connectivity to AI-enabled IoT Keynote Speaker: Baek-Young Choi – Missouri University Science and Technology, EUA Keynote Chair: Paulo Cardieri (SIoT)	
Coffee Break		
10:00 - 12:15	Session 4: Smart Cities (2)	Session 5: Edge, Cloud e Digital Twins
10:00 - 10:20	Exploring the Impact of Operational Variables on BEB Energy Consumption Using IoT devices	A Systemic View on Implementing IoT Solutions
10:20 - 10:40	Quantized Clustering of GNSS Bus Trajectories	Property Security System with Temporal Algorithm Applied to RSSI Variation
10:40 - 11:00	An IoT-Based Urban Waste Monitoring Platform with Route Optimization and Citizen Engagement	Visualizing IoT through Digital Twins: A Low-Cost Approach
11:00 - 11:20	Temperature-Driven Variations in Stand-by Energy Use of an Electric Bus: A CAN-IoT Case Study in Campinas, Brazil	Embedding Federated Learning in IoT Governance: An Extension to the Tpm+ Methodology
11:20 - 11:40	Proposal of a Sensor and IoT-Based Structural Health Monitoring System for Marine Fenders	Enhancing Retrieval-Augmented Generation through Modular Optimization: Evaluation Across the RAG Pipeline
11:40 - 12:00	Educational Electric Consumption Analysis for Campinas-SP Brazilian Region	CPU-Based Horizontal Pod Autoscaling for Distributed IIoT Control in Kubernetes Edge Environments
Lunch		
13:45 - 14:30	Keynote Speech (AUDITORIUM III) – Advances in Industrial IoT: Virtualization and Edge Computing for Flexible and Low-Latency Architectures Keynote Speaker: Paolo Ferrari – Università degli Studi di Brescia, Italy Keynote Chair: Dennis Brandão (SIoT)	
14:30 - 16:00	Session 6: Industry and Energy (2)	Session 7: Agriculture
14:30 - 14:50	Support Tool for the Provision of Ancillary Services in Distribution Systems	An Optimization Model for IoT Gateways Placement in Agrivoltaics
14:50 - 15:10	Rule-Based Control Strategy for Battery Energy Storage Systems Providing Ancillary Services in Distribution Networks	Low-Cost Embedded System for Real-Time Supervision of Agricultural Tractor Performance Using IoT
15:10 - 15:30	Context-Aware IoT Smart Hub: A Semantic and Cognitive Architecture for Adaptive Internet of Robotic Things Environments.	Edge Machine Learning for Forest Acoustic Monitoring Implementation
15:30 - 15:50	TID-Hardened IoT Design Using Diamond and Octo MOSFET Layouts Styles	PE Model Applied to LoRa Communication Characterization for IoT in Precision Agriculture
Coffee Break		
16:15 - 17:00		Session 7: Agriculture (Cont.)
16:15 - 16:35		Resource-Constrained Federated Learning for Precision Agriculture Using ESP32 Edge Devices
16:35 - 16:55		Integration of Airborne LiDAR and TV White Space Connectivity for Precision Agriculture

October 16 th		
Schedule	AUDITORIUM I	AUDITORIUM II
9:00 - 9:45	Keynote Speech (AUDITORIUM III) – Governo - Fomento à Inovação: Iniciativas e Apoio à Inovação em IoT Keynote Speaker: Henrique Miguel – MCTI Keynote Chair: Gabriel Marão – FBioT	
Coffee Break		
10:00 - 12:15	Session 8: Education	Session 9: Network and Protocol (1)
10:00 - 10:20	An Open-Source LoRaWAN Architecture for Educational and Scientific IoT Applications: A Case Study Using BitDogLab	Zero-Day Device Identification for IoT Security through Optimized Incremental Learning and Drift Adaptation
10:20 - 10:40	A case of a Cyber-Physical System Laboratory improvements implementation	LoRa Radio Link Quality Assessment Strategy Using Sensitivity as a Link Quality Indicator
10:40 - 11:00	An Easy-to-Use Platform for IoT Systems on Low-Cost Hardware	Joint Analog Beamforming and Beyond-Diagonal RIS Design for Efficient Wireless Energy Transfer
11:00 - 11:20	CAN Bus Analyzer for Educational Applications: Expanding a Didactic Arduino Platform	Optimization of the Number of IoT Devices Assisted by RF-based WET Systems
11:20 - 11:40	Development of a Teaching and Research Platform for Industrial Networks and Internet of Things - PEPRioT	A Transparent Baseline for LoRa Device Fingerprinting with CNN
11:40 - 12:00		Automated Machine Learning for IoT Security: A Comparative Study of Intrusion Detection Approaches
Lunch		
13:45 - 14:30	Keynote Speech (AUDITORIUM III) – Trends and Challenges of IoT in Agriculture Keynote Speaker: Prof. Eduardo Fernandes Nunes – University of Campinas, Brazil Keynote Chair: Barbara Teruel (SIoT)	
14:30 - 16:00	Session 10: Smart Cities (3)	Session 11: Environmental Monitoring
14:30 - 14:50	IoT Ecosystem Integrated with DLT Applied to the Tourism Sector	Low-Cost Flood Monitoring System Using ESP32-CAM with Edge Image Processing for Data Reduction
14:50 - 15:10	Real-Time Power Measurement System for Electric Vehicle Chargers	Energy Budget and Time-to-Failure Analysis of Wi-Fi, LoRa, and 3G/4G Back-Hauls in a Landslide-Monitoring Node
15:10 - 15:30	A Linux Device Driver for Human Presence Detection Using Millimeter-Wave Radar	Real-Time Monitoring System for Flooding in Urban Areas
15:30 - 15:50	Multi-Threaded Wi-Fi Probe-Sniffing for APCS	
Coffee Break		
16:15 - 17:00	Session 12: Network and Procolol (2)	
16:15 - 16:35	Experimental Performance Evaluation of IEEE 802.15.4-Based IoT Networks Integrated with Radio-over-Fiber	
16:35 - 16:55	Immersive Applications with XR and 5G: An Experimental Study Using Distributed Architecture	
17:00 - 17:30	CLOSING SESSION (AUDITORIUM III)	

Keynote Speakers:

PALESTRANTE	INSTITUIÇÃO	TEMA
Marcelo Zuffo	Inova.USP	Panorama Internacional (IoT no Brasil e no Mundo)
Giuliano Mendonça	EMBRAER	Impactos da IoT na Indústria Aeronáutica: Case EMBRAER
Baek-Young Choi	Missouri University Science and Technology, EUA	IoT Technology Spectrum: From Sensor Connectivity to AI-enabled IoT
Paolo Ferrari	Università degli Studi di Brescia, Italy	Advances in Industrial IoT: Virtualization and Edge Computing for Flexible and Low-Latency
Henrique Miguel	MCTI	Governo - Fomento à Inovação: Iniciativas e Apoio à Inovação em IoT
Prof. Eduardo Fernandes Nunes	University of Campinas, Brazil	Trends and Challenges of IoT in Agriculture

Important Dates - SloT

- Paper submission: June 23rd, 2025
- Author notification: August 18th, 2025
- Camera-Ready deadline: September 12th, 2025

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Access Authors page for more information.

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Visit the LABIoT website to register and find out more.'

Sponsors and Organizers:

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Questions or inquiries?

Contact us:

Email: cpten@unicamp.br

Email Subject: < 2025 SIoT - Assistance Request

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