Conference Program

October 14th, 15th and 16th -2026

UNICAMP University, Campinas – SP - Brazil

LCV LABORATORY OF VISUAL COMMUNICATIONS

Centro de Tecnologia da Informação Renato Archer
UNIDADE DE PESQUISA DO MCTI

UNICAMP

Welcome to the BTSym'2026 as a Virtual Event

The Brazilian Technology Symposium (BTSym), **ISSN 2447-8326**, is an event created by the Laboratory of Visual Communications of the Faculty of Electrical and Computer Engineering at the State University of Campinas. This is an excellent forum for presentations and discussions of the latest results of projects and development research in several areas of knowledge, in scientific and technological scope.

This event seeks to bring together researchers, students, and professionals from the industrial and academic sectors, seeking to create and/or strengthen the linkages between issues of joint interest. Participants are invited to submit research papers, case studies, articles of opinion, or posters, showing studies, methodologies, and results achieved in scientific level research projects, completion of course work for graduation, dissertations, and theses.

The BTSym'26 organizing committee invites researchers to attend and submit papers addressing the current research topics of interest. In 2026, the event will be held on **October 14th, 15th, and 16th at the CTI Renato Archer, SP**. Proceedings of the event will be published by **Springer** publisher through the book **Proceedings of the 11th Brazilian Technology Symposium - Emerging Trends and Challenges in Technology**, and will be submitted for indexing by **Scopus**, **WoS,** and **EI Compendex database.**

In 2026, **we received 69 research works, divided into: 63 articles submitted for option A and 6 articles submitted for option B.**

Dr. Yuzo Iano
General Chairman

Organizing Committee

Rangel Arthur
FT/UNICAMP
Associate-GeneralChair

Angela Maria Alves
CTI Renato Archer
Vice-Associate- GeneralChair

Lisber Arana
LCV/DECOM/FEEC/UNICAMP
InstitutionalRelationshipChair

Gabriel Gomes de Oliveira
LCV/DECOM/FEEC/UNICAMP
Technical Program and Finance Chair

Alex R. Ruelas
LCV/DECOM/FEEC/UNICAMP
Institutional Relationship Chair

David Minango
LCV/DECOM/FEEC/UNICAMP
Institutional Relationship Chair

Gabriel Caumo Vaz
LCV/DECOM/FEEC/UNICAMP
Institutional Relationship Chair

Juan Minango
LCV/DECOM/FEEC/UNICAMP
Institutional Relationship Chair

Alysson Gomes de Oliveira
LCV/DECOM/FEEC/UNICAMP
Marketing Chair

Editorial Board

- **Dr. Yuzo Iano**
- **Dr. Osamu Saotome**
- **Dr. Rangel Arthur**
- **Dr. Guido Humberto Cayo Cabrera**
- **Dr. Marcelo Zambrano Vizuete**
- **Dr. Kanubhai K. Patel**
- **Dr. Gabriel Gomes de Oliveira**

General information

Conference Location:

Virtual via Webex

Contact Info:

Phone LCV committee:
Gabriel Gomes:
+55 19 982886496

Contact BTSym Support:

If you have any need for additional information, questions, concerns, and/or system issues, please feel free to contact the Editorial Office via email.

Email Address:

contact.btsym@gmail.com

Virtual Oral and Poster Presentations:

The authors are obliged to be present during the panels designated for the presentation, using the time given by the person in charge of the panel discussion or posters session. Such presentations utilize technological solutions to allow you present live.

Useful Telephone Numbers:

Ambulance: 192

Police: 190

Fire Brigade: 193

These numbers may be dialed from public or mobile phones, even without a card.

Official Event Room:

https://conferenciaweb.rnp.br/sala/gabriel-gomes-de-oliveira-3

RNP

Plenary Talks - PANEL 1

October 14th, 2026 (14:00 – 15:10)

Panel discussion 1: Technology and industrial processes.
Topic covered: Industrial technological processes, Technology applied to production processes, Innovation models, Digital factory, Quality 4.0, Logistics 4.0, Innovation 4.0, Clean technologies, Industrial automation, Engineering Process Simulations.

Moderator:
Wandercleiton Cardoso, PhD

14:00 - 14:10	**018 - Bearing Fault Diagnosis Through Physics-Informed Wavelet Filtering:** Authors: Silva, J., De Medeiros, R.
14:10 - 14:20	**038 - Predicting Machine Failure in Industrial Equipment Using the AI4I 2020 Dataset: A Comparative Machine Learning Study** Authors: Nilay Vaidya, Kanubhai K. Patel, Kamini Solanki.
14:20 - 14:30	**066 - Effects of Sulfur and Phosphorus on ASTM A522 Type I Steel for Oil and Gas Applications** Authors Wandercleiton Cardoso, Danyelle Santos Ribeiro, Thiago Barreto da Silva Amaral, Bruno Locateli and Itman André Filho.
14:30 - 14:40	**075 - Sustainable practices in the cosmetics industry: an exploratory and documentary research in companies in the sector** Authors Marcos Ricardo Rosa Georges, Denise Helena Lombardo Ferreira, Alice Godoy Pierce and Matheus Azzalin Burgos.
14:40 - 14:50	**079 - Avaliação de Desempenho de Redes de Filas com Modelagem e Simulação de um Case Baseado em Estudo da SITA** Authors Stefani Valtriani do Patrocínio, Marli de Freitas Gomes Hernandez, José Roberto Emiliano Leite and Edson Luiz Ursini.

14:50 - 15:00	**089 - Image Data Analysis and 3D Reconstruction of Using Gaussian Splatting** Authors Haroldo Gomes.
15:00 - 15:10	**091 - Depth Map Estimation for 2D Fluid Analysis in Industrial Safety Simulations** Authors Haroldo Gomes.

Plenary Talks - PANEL 2

October 14th, 2026 (19:00 – 20:30)

Panel discussion 2: Microelectronics, Sensors, Robotics, Artificial Intelligence, and Real-Time Systems.

Topic covered: Microelectronics, MEMS, Reconfigurable Devices and Systems, Sensors, Robotics, Satellites, Aerospace and Defence, Artificial Intelligence, Radar System and Algorithms, Resilient and Robust Systems, Real-Time Systems.

Moderator:
Osamu Saotome, PhD

19:00 - 19:10	**015 - Paper: A symbolic Taylor-based framework for sensitivity-driven precision allocation in embedded numerical systems** Authors: Vítor Ferreira Gonçalves, P., Saotome, O.
19:10 - 19:20	**042 - Paper: Modeling and simulation of a single-mode extrinsic fiber Fabry-Perot interferometric sensor (SMF-EFPI)** Authors: Marcelle Eduarda Franco de Lima.
19:20 - 19:30	**046- AETHON: Deterministic Pre-Inference Defense for LLM Prompt Injection** Authors: Leonardo Bruscagini de Lima, Jorge Carlos Valverde-Rebaza, Alexandre de Barros Barreto and Yuzo Iano.
19:30 - 19:40	**047- A Conceptual Knowledge Model for Artificial Intelligence Tasks on Patent Data** Authors: Rodrigo Ramos Nogueira.
19:40 – 19:50	**049 - AnomalyQ: A Reproducible Classical–Quantum Benchmark for DDoS Detection in NISQ Environments** Authors: Leonardo Bruscagini de Lima , Luca Misi Rocha , Javier Martinez Silva , Leonardo Foschine, and Yuzo Iano.
19:50 – 20:00	**056- Feasibility Limits of Drone Fleets for Fighting Class B Fires in Port TerminalsAETHON: Deterministic Pre-Inference Defense for LLM Prompt Injection** Authors: Leonardo Bruscagini de Lima, Jorge Carlos Valverde-Rebaza, Alexandre de Barros Barreto and Yuzo Iano.

20:00 - 20:10	**085- Feasibility Limits of Drone Fleets for Fighting Class B Fires in Port Terminals** Authors: Thiago Werlley Bandeira da Silva, André Alves de Freitas, Guilherme de Oliveira Torres and Mariana Amorim Fraga.
20:10 - 20:20	**095- Hardware Cost and Live GPS Data-Path Evaluation of AES-128-CTR on an FPGA** Authors: Leonardo F. Cavalcante, Italo Thiago Felix Dos Santos, Felipe Escobar Do Amaral, Bernardo Gontijo Fernandes and Edgard L. O. da Silva.

Plenary Talks - PANEL 3

October 15th, 2026 (9:00 – 9:30)

Panel discussion 3: Technology applied to buildings.
Topic covered: Construction 4.0, Automation and Robotics in buildings, Environmental comfort, Energy efficiency in buildings, Constructions, Technologies in Design, BIM, Construction Information Model, Provisional and adapted constructions, Sensors applied to civil construction, Sustainable buildings, Smart buildings.

Moderator:
Gabriel Gomes de Oliveira, PhD

9:00 - 9:10	**008 - Paper: A Mechanism Informed Hybrid Digital Twin Reference Architecture for High Voltage Circuit Breaker Opening Mechanisms: A Trip-Coil Current Demonstration** Authors: Pontes da Silva, W., Simas Da Silva, Y., Gondres Torné, I.
9:10 – 9:20	**026 - Paper: Photovoltaic Energy Generation Forecasting Using Long Short-Term Memory Networks** Authors: Tardio, M., GABRIEL RIBEIRO, J., Vale, G., Oliveira, V., Pacheco, A., Terra de Almeida, F., SILVA, J., SALVIANO DIAS PAULISTA, R., Lopes, L.
9:20 - 9:30	**064 - Paper: From Solar Resource to Actual Generation: A Critical Review of Photovoltaic Potential in the United States** Authors: Wandercleiton Cardoso, Danyelle Santos Ribeiro, Dewayne Mosier, Karla Linhaus, Bruno Locateli, Guilherme Gegenheimer Bazilio, Weverton Mattos Gotardo.

Plenary Talks - PANEL 4

October 15th, 2026 (14:00 – 14:30)

Panel discussion 4: Product Development and Innovation.
Topic covered: Engineering design, Design methods, Design thinking, Sustainable product development, Circular economy, Cradle to Cradle (C2C), Innovation strategies applied to product development, Business model innovation, Digital innovation and transformation, Open innovation.

Moderator:
Marcos Almeida do Amaral, MSc.

14:00 - 14:10	**022 - Paper: Collaborative Innovation Process for Brazilian Startups: A Multiple Case Study** Authors: Mayara Taísa Lins de Oliveira
14:10 - 14:20	**027 - Paper: From Co-production to Capturable Value** Authors: Pereira, A., Martins, W., Pereira, J.
14:20 - 14:30	**036 - Paper: Exploring Large Language Models and Retrieval-Augmented Generation for Assisting Technical Proposal Development in Research and Technology Organizations** Authors: Bruna D. Pupo, Matheus Covre de Queiroz, Victor Rodrigo Leite, Magalhães de Almeida, Helena Gonçalves Silva, Josiele Ferreira and Daniel Trevisan Tatsch.
14:30 - 14:40	**082 - Paper: Beyond Obsolescence: A Sustainability Framework for Extending Hardware Lifecycle in Artificial Intelligence Computing** Authors: Santos, I. T. F., Miguel, A. J. B.Calisto, N. C., Medeiros, A. C. V., Ozório, A. F. B., Bassini, F., and Silva, E. L. O.

Plenary Talks - PANEL 5

October 15th, 2026 (19:00 – 19:50)

Panel discussion 5: Telecommunications, product development and innovation in mobile systems.

Topic covered: New products and services, Mobile systems for 4G and 5G cell phones, Visual computing, Image and video processing, Machine learning, Human-computer interaction using image processing, Image processing for real-time control, Medical image processing, new generation of digital TV, Digital TV interactivity, Broadband and transmission systems.

Moderator:
Edgard Luciano Oliveira da Silva, PhD

19:00 - 19:10	**003 - Paper: Forecasting Bitcoin Price Movements Using Large Language Models and Sentiment Analysis.** Authors: Filipe Henrique Muniz, Guilherme Palermo Coelho and Arthur Emanu
19:10 - 19:20	V **028 - Paper: Proposição de uma Metodologia para Localização Automatizada de Falhas em Redes de Distribuição de Energia Aérea** Authors: João Pedro Jamarino Dias, Mario Sergio Cambraia, Talita Benedá, and Luiz Henrique Leite Rosa.
19:20 - 19:30	**040 - Paper: Federated Multi-Agent Reinforcement Learning for Slice-Oriented Resource Allocation in 5G mmWave Networks** Authors: Suja A. Alex.
19:30 - 19:40	**046 - Paper: Análise Sistemática e Estatística de Sobretensões na Energização de Linhas de Transmissão com Para-Raios e Resistência de Pré-Inserção e Chaveamento** Authors: Rodrigo Delfini Edo, Silvio Renato Messias de Carvalho and Yuzo Iano.
19:40 - 19:50	**059 - Paper: An LLM-Orchestrated Multi-Agent System of CNN Classifiers for Explainable Tuberculosis Screening on Chest X-Rays** Authors: João Caio Souza Nunes, Miguel Angel Orellana Postigo, Israel Gondres Torné and Daniel Guzman Del Río.

Plenary Talks - PANEL 6

October 16th, 2026 (9:00 – 9:30)

Panel discussion 6: Technologies applied to urban infrastructure.
Topic covered: Smart Cities, Urban environmental comfort, Technologies applied to urban planning, Technology and management of urban infrastructure, Innovation and technology in the urban environment, Intelligent technology and transport, Urban monitoring.

Moderator:
Angela Maria Alves, PhD.

9:00 - 9:10	**009 - Paper: Artificial intelligence and justice in Brazil: biases and impacts of misuse** Authors: Bergantini Dias, S., Chuma, E.
9:10 - 9:20	**020 - Paper: Application of the SSAM model for conflict reduction and reducing the risk of accidents at high-flow intersections.** Authors: Leonardo gomez, J., Cueva Escudero, R.
9:20 - 9:30	**043 - Paper: Benchmarking of Lightweight YOLO Models and MixedPrecision Quantization on CPU-Only Edge Devices: A Case Study for PPE Detection.** Authors: Kaio Alexandre Silva Lima, Fabio de Sousa Cardoso, Daniel Guzmán Del Río and Carlos Mauricio Serodio Figueiredo.

Plenary Talks - PANEL 7

October 16th, 2026 (14:00 – 14:40)

Panel discussion 7: Applied Biomedicines.
Topic covered: Medicine, Covid-19, Dentistry, Biology, Biomedicine, Nursing, Medicines,Vaccines.

Moderators:
João Gabriel Ribeiro Damian, PhD

14:00 - 14:10	**002 - Paper: Supporting Process Capability Evaluation in a Hospital Sterilisation Department Using a ChatGPT-Based Agent: A Case Study** Authors: Rozo, I., Jiménez, C., Azzolini, W., Henrique dos Santos, C., Romano, A.
14:10 - 14:20	**025 - Paper: Teaching Statistics with Open-Source Software at UNEMAT in Sinop, Mato Grosso, Brazil: Community Engagement and Student Development with R and RStudio** Authors: Lopes, L., GABRIEL RIBEIRO, J., Vale, G., Oliveira, V., Biscaro, A., Braga do Vale, G., TARDIO, M.
14:20 - 14:30	**039 - Paper: Predicting Coronary Heart Disease Presence from the UCI Cleveland Dataset: A Comparative and Explainable Machine Learning Study Using Permutation-Based** Authors: Nilay Vaidya, Kanubhai K. Patel, Kamini Solanki
14:30 - 14:40	**067 - Paper: Digital System for Longitudinal Monitoring of Training Load, Physical Health, and Well-Being in Youth Football Participants** Authors: Rinaldo Gambaro, Danyelle Santos Ribeiro, Wandercleiton Cardoso

Official Closing – Event Virtual

October 16th, 2026 (19:00 – 20:00)		
19:00 - 20:00	**Official Closing** **Moderator:** Kelem Pereira Jordão, PhD	
	Lecture – O avanço e impacto da Telecomunicação. Uma abordagem: Brasil no século XXI. **Speaker:** Eduardo Camargo, BSc.	

Sponsor:

Thank you very much!

LCV
LABORATORY
OF VISUAL
COMMUNICATIONS

Centro de
Tecnologia da
Informação
Renato Archer
UNIDADE DE PESQUISA DO MCTI

UNICAMP