

VIRTUAL EVENT

BT Sym '22

Brazilian Technology Symposium



Conference Program

October 24th, 25th, and 26th - 2022
Mackenzie University, Campinas - SP - Brazil

Organization



Welcome to the BTSym'2022 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'22 organizing committee invites researchers to attend and submit papers addressing the current research topics of interest. In 2022, the event will be held on **October 24th, 25th, and 26th at the Mackenzie University of Campinas, SP**. Proceedings of the event will be published by **Springer** publisher through the book **Proceedings of the 8th Brazilian Technology Symposium - Emerging Trends and Challenges in Technology**, and will be submitted for indexing by **Scopus, WoS, and EI Compendex** database.

In 2022, we received **170 research works, divided into: 120 articles submitted for option A and 50 articles submitted for option B.**



Dr. Yuzo Iano
General Chairman

BTSym`22 Tribute

It is with deep regret that we announce the death of Mr. Telmo Cardoso Lustosa, Coordinator of BTSym`22. The death occurred on September 23rd, 2022 at his residence.

On behalf of the BTSym`22 Organization, we send our sincere condolences, and thank the Professor for all his help.



Telmo Cardoso Lustosa
LCV/DECOM/FEEC/UNICAMP

Organizing Committee



Rangel Arthur
FT/UNICAMP
Associate-General Chair BTSym



Maria Thereza de
Moraes Gomes Rosa
Mackenzie/Campinas
**Vice-Associate-
General Chair BTSym**



Jorge Luiz da Paixão Filho
Mackenzie/Campinas
**Vice-Associate-
General Chair BTSym**



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



Lisber Arana
LCV/DECOM/FEEC/UNICAMP
Institutional Relationship Chair



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



Coordinating Committee



Maria Thereza de Moraes Gomes Rosa
Mackenzie Presbyterian University
Panel 1



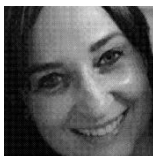
Ana Cláudia Seixas
UNIFAL
Panel 1



Osamu Saotome
ITA
Panel 2



Euclides Lourenço Chuma
LCV/DECOM/FEEC/UNICAMP
Panel 2



Cláudia Cotrim Pezzuto
PUC/CAMPINAS
Panel 3



João Carlos Gabriel
Mackenzie/Campinas
Panel 3



Fábio Menegatti de Melo
PUC/CAMPINAS
Panel 4



Marcos Almeida do Amaral
Mackenzie/Campinas
Panel 4



Edgard Luciano Oliveira da Silva
UEA
Panel 5



Marcius Fabius Henriques de Carvalho
PUC/CAMPINAS
Panel 5



Jorge Luiz da Paixão Filho
Mackenzie/Campinas
Panel 6



Telmo Cardoso Lustosa
LCV/DECOM/FEEC/UNICAMP
Panel 6



Victor A. M. Montalli
SLMANDIC
Panel 7



Gabriela Fleury Seixas
UEL
Panel 7

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

Useful Telephone Numbers:

Ambulance: 192

Police: 190

Fire Brigade: 193



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

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 poster session. Such presentations utilize technological solutions to allow you present live.

Official Opening – Virtual Event

October 24th, 2022 (10:00 - 12:00)	
10:00 - 12:00	Official Opening
	<div><div><div>Opening Speaker</div><div>Moderator: Kelem Christine Pereira Jordão, PhD</div></div><div></div></div>
	<div><div><div>Lecture: Energy Efficiency</div><div>Speaker: Flávio Robero Mathias</div></div><div></div></div>

Plenary Talks - PANEL 1

October 24th, 2022 (14:00 – 16:00)

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.

Moderators:

Maria Thereza de Moraes Gomes Rosa, PhD

Ana Cláudia Seixas, PhD



14:00 - 14:10	<p>Paper: Application of arduino UNO technology in the creation of didactic interactive robots as a teaching resource for secondary school teachers.</p> <p>Authors: Milagros del Carmen Castañeda Barbaran and Consuelo Ivonne Del Castillo Castro.</p>
14:10 - 14:20	<p>Paper: Batzbot ferramenta de criatividade para crianças deficientes.</p> <p>Authors: Daniel Duzzi Paulo and Amilton da Costa Lamas</p>
14:20 - 14:30	<p>Paper: Proximity marketing: agile framework for a systematic literature review.</p> <p>Authors: Consuelo Ivonne Del Castillo Castro, Luis Alberto Quiroz Barbadillo and Milagros del Carmen Castañeda Barbarán.</p>
14:30 – 14:40	<p>Paper: Neuro–Fuzzy Decentralized Control of a Water Tank Process.</p> <p>Authors: Alexander Ortega and Arturo Rojas–Moreno.</p>
14:40 - 14:50	<p>Paper: Mini-environmental program to develop pro-environmental social skills in 5 years old children.</p> <p>Authors: Pascual Ayamamani, Eulalia Pérez, Reveca Pichihua and Diana Quispe.</p>
14:50 - 15:00	<p>Paper: Centralized and Decentralized Control of the Water Tank Process – A Comparative Study.</p> <p>Authors: Freddy Pantoja and Arturo Rojas–Moreno.</p>
15:00 - 15:10	<p>Paper: Using thermal wheels for LAFIQ/Fiocruz air conditioning system heat recovery.</p> <p>Authors: Lucas José Paskevicius Rabecchi, Maria Thereza de Moraes Gomes Rosa and Míriam Tvřská de Gouvêa.</p>

Plenary Talks - PANEL 2

October 24th, 2022 (19:00 – 21:00)

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.

Moderators:

Osamu Saotome, PhD

Euclides Lourenço Chuma, PhD



19:00 - 19:10	<p>Paper: Artificial Neural Networks for Prediction of Hot Metal Production in a Blast Furnace.</p> <p>Authors: Wandercleiton Cardoso, Renzo Di Felice, Thiago A. P. Machado, Bruna N. Santos, Leticia C. Macedo, André Luiz Caulit, Marcelo Margon, Danyelle S. Ribeiro.</p>
19:10 - 19:20	<p>Paper: The Method of Ontological Designing of Complex Structural Events in the Study of Strikes of Aircraft with Wildlife.</p> <p>Authors: Nikolai I. Plotnikov.</p>
19:20 - 19:30	<p>Paper: A Digitally Controlled Delay Generator Implemented with Cyclone V FPGA using Timing Analysis</p> <p>Authors: Vlademir J. S. Oliveira, Elton F. Santos, Weverton R. Cajado, Franklin H. Schmatz and Wellington R. Melo.</p>
19:30 – 19:40	<p>Paper: Detection of defects through Artificial Vision in the sack sewing process in the Productive Sector, Trujillo 2022.</p> <p>Authors: Ryan Abraham León León, Brenda Stephany Domínguez García, Gerald Arturo Guerrero Cárdenas, Alysson Merlly Urrutia Rodríguez.</p>
19:40 - 19:50	<p>Paper: Simulation of a grape bunch selection system using Artificial Vision in agro-industrial companies.</p> <p>Authors: León León Ryan, Vásquez Reyes, Steven, Correa Quispe, David.</p>
19:50 - 20:00	<p>Paper: Aplicação de metodologia híbrida para desenvolvimento de softwares embarcados automotivos</p> <p>Authors: Tiago Augusto Meurer Müller, Josué Marcos de Moura Cardoso.</p>

Plenary Talks - PANEL 3

October 25th, 2022 (10:00 – 12:00)

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.

Moderators:

Cláudia Cotrim Pezzuto, PhD

João Carlos Gabriel, MSC



10:00 - 10:10	<p>Paper: Application of cluster analysis to electricity generation data from the Santo Antônio hydroelectric plant in the state of Rondônia, Brazil.</p> <p>Authors: João Gabriel Ribeiro, Carlos Tadeu dos Santos Dias, Sônia Maria de Stefano Piedade, Giovane do Vale Maia, and Vlademir de Jesus Silva Oliveira.</p>
10:10 - 10:20	<p>Paper: Application of BIM Collaborate in the Pre- Reinforced Steel System to improve the Collaborative workflow between stakeholders in the Design phase of Building projects.</p> <p>Authors: Camila Zenozain Alave, Victor Changanaqui Changanaqui and Jorge De La Torre Salazar.</p>
10:20 - 10:30	<p>Paper: Application of the GR4j Method and the ERA5 gridded climatic information to obtain monthly flows in the Pisco basin to the Letrayoc station.</p> <p>Authors: Flores Peralta Luis Fabricio Silva Arce George Rafael, Carmona Arteaga Abel and Neyra Torres José Luis.</p>
10:30 – 10:40	<p>Paper: IoSeed – Sistema de Irrigação Automática baseado em IoT.</p> <p>Authors: Diana de Araujo Soares, Bárbara Menegassi Batista, Felipe Yuji, Angela Alves dos Santos, Josué Marcos de Moura Cardoso, Gabriel Gomes and Everton Oliveira Dias.</p>
10:40 - 10:50	<p>Paper: Monitoramento de Luminosidade, Temperatura e Gás, aplicação baseada em IoT.</p> <p>Authors: Bianca Donadon, Marcelo de Carvalho Gomes, Gabriel Henrique Granado, Angela Alves dos Santos, Josué Marcos de Moura Cardoso, Gabriel Gomes and Everton Oliveira Dias.</p>
10:50 - 11:00	<p>Paper: Kanban e TRIZ – Abordagem multidisciplinar para o desenvolvimento de um software para solução em IoT.</p> <p>Authors: Rafael Augusto Pissardo, Josué Marcos de Moura Cardoso, Valéria Cristina dos Santos Silva, Gabriel Gomes and Yuzo Iano.</p>

Plenary Talks - PANEL 4

October 25th, 2022 (14:00 – 16:00)

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.

Moderators:

Fábio Menegatti de Melo, PhD

Marcos Almeida do Amaral, MSc.



14:00 - 14:10	<p>Paper: Academic performance in the courses of the curricular area of general studies: Case of the Professional School of Mining Engineering.</p> <p>Authors: Fernando B. Salas-Urviola.</p>
14:10 - 14:20	<p>Paper: Centralized and Decentralized Control of the Water Tank Process – A Comparative Study.</p> <p>Authors: Freddy Pantoja and Arturo Rojas–Moreno.</p>
14:20 - 14:30	<p>Paper: Robotic Process Automation e a Transformação Digital na Indústria Automação de um Centro de Serviços Compartilhados.</p> <p>Authors: Bianca Donadon and Lorenzo Campos Coiado.</p>
14:30 – 14:40	<p>Paper: A data-driven methodology for analyzing field nonconformities in semiconductor production applied to a Brazilian manufacturer.</p> <p>Authors: Jorge M. de Souza, Giovanni M. de Holanda, Fabrício Cristófani, Luana A. Sartor and Paulo C. Sardinha.</p>
14:40 - 14:50	<p>Paper: Footprints’ effectiveness as decision-making tools for promoting sustainability.</p> <p>Authors: Bruna A. Branchi, Denise Helena Lombardo Ferreira, Alan Marcelo Barbosa and Ana Luiza Ferreira.</p>

Plenary Talks - PANEL 5

October 25th, 2022 (19:00 – 21:00)

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.

Moderators:

Edgard Luciano Oliveira da Silva, PhD

Marcus Fabius Henriques de Carvalho, PhD



19:00 - 19:10	<p>Paper: MIMO Antenna Systems: Performance, Metrics, and Challenges.</p> <p>Authors: Jacob Abraham and S.Kannadhasan.</p>
19:10 - 19:20	<p>Paper: Effect Analysis of Service Entrance Box on the Wireless Communication Performance of Home Electric Power Meters.</p> <p>Authors: Rafael Jose Minhoto.</p>
19:20 - 19:30	<p>Paper: Technological feasibility for the application of cellular manufacturing in a typical costume workshop (caporales).</p> <p>Authors: Joao Maldonado-Galván, María del Carmen Mendoza-Velásquez, Juan Carlos Quiroz-Flores and Martín Collao-Díaz.</p>
19:30 – 19:40	<p>Paper: Sistemas Embarcados: Comunicação via ESP32 com LoRa.</p> <p>Authors: Nunes, Eduardo Elias; Costa, Arlindo Messias Mendes da; Rezende, Diogo Pena; Souza, Rodrigo Alencar de; Amaral, Hiram Carlos Costa; and Mourão, Andreza.</p>
19:40 - 19:50	<p>Paper: Long-range network (LoRa) behavior in the Amazon region in a fluvial environment.</p> <p>Authors: Danilo Frazão, Diana Martins, and Edgard Silva.</p>
19:50 - 20:00	<p>Paper: Fault management in manufacturing process: quality indicators for short- and medium-term monitoring and their interrelationship.</p> <p>Authors: Murilo O. Homem, Frederico R. Bettanin, Jorge Moreira de Souza, Giovanni Moura de Holanda and Fabrício Cristófani.</p>

Plenary Talks - PANEL 6

October 26th, 2022 (10:00 – 12:00)

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.

Moderators:

Jorge Luiz da Paixão Filho , PhD



10:00 - 10:10	<p>Paper: Novas Ondas Tecnológicas Emergentes na Transformação Digital: Internet das Coisas IoT/IoE, Redes Móveis 5G/6G e Indústrias 4.0/5.0.</p> <p>Authors: José Roberto Emiliano Leite, Edson Luiz Ursini, Adão Maciel Monteiro Chmielewski and Antônio José Dias da Silva.</p>
10:10 - 10:20	<p>Paper: Optimal charging coordination of electric vehicles using the Teaching-Learning-Based Optimization algorithm.</p> <p>Authors: Euler B.P. Santos and Carlos A. Castro.</p>
10:20 - 10:30	<p>Paper: Detection of Buildings in Satellite Images of Rural Locations for Wireless Access Network Coverage Planning.</p> <p>Authors: Segundo Francisco Segura Altamirano, Diana Mercedes Castro Cárdenas, Ayax Manuel Sifuentes Montes, Merly Liliana Yataco Bernaola, José Carlos Alban Palacios and Hans Ciovanni Quispe Arcos.</p>
10:30 – 10:40	<p>Paper: A good-practices guideline for 6-DoF IMU-based dead-reckoning.</p> <p>Authors: James Schipmann Eger, Mauricio de Campos Porath and Gustavo Daniel Donatelli.</p>
10:40 - 10:50	<p>Paper: Simulation for the trajectory of a hexacopter with a manipulator using the Lyapunov stability method for agro-industrial crops.</p> <p>Authors: León León Ryan Abraham, León Dávila Jazmín de Fátima, Mostacero Atoche Jeniffer Alexandra.</p>
10:50 - 11:00	<p>Paper: Assistente de Atividade IoT auxilia no acompanhamento do Público 60+. Dispositivo de Internet das Coisas.</p> <p>Authors: Francisco de Salles Cintra Gomes, Laura Simionatto Budahazi, Nathalia Farinha Rodrigues and Vanderlei Palandrani Junior.</p>

Plenary Talks - PANEL 7

October 26th, 2022 (14:00 – 16:00)

Panel discussion 7: Applied Biomedicines.

Topic covered: Medicine, Covid-19, Dentistry, Biology, Biomedicine, Nursing, Medicines, Vaccines.

Moderators:

Victor A. M. Montalli, PhD



Gabriela Fleury Seixas, PhD



14:00 - 14:10	<p>Paper: Pregnant Women Diabetic Prediction using 1D-Convolutional Neural Network and the SMOTE Procedure.</p> <p>Authors: Suja A. Alex, Gabriel G. Oliveira and Y. Iano.</p>
14:10 - 14:20	<p>Paper: Effects of natural dyeing with turmeric (curcuma longa) on the color fastness of alpaca yarn.</p> <p>Authors: Julio C. Laura Huanca, Elida J. Mamani Puma, Madelaine Huánuco Calsín, Elena Yunga Zegarra and Oscar M. Flores López.</p>
14:20 - 14:30	<p>Paper: Análise de Dados Elétricos Neurais Utilizando MUSE e EEGLAB.</p> <p>Authors: Matheus Ramires Bonfim and Amilton da Costa Lamas.</p>
14:30 – 14:40	<p>Paper: Classification of respiratory sounds anomalies using digital audio signal processing and artificial neural networks.</p> <p>Authors: Mauricio Calheiro, Danilo Frazão and Edgard Silva.</p>
14:40 – 14:50	<p>Paper: Use of Machine Learning in the analysis of risks and effects that cause musculoskeletal disorders, related to work in alluvial mining in the Mining Cooperatives of Ananea Puno-Peru.</p> <p>Authors: Fernando Benigno Salas-Urviola, Carlos Paul Hancoco Ramos and Emmanuel Hernan Tummy-Gomez.</p>
14:50 – 15:00	<p>Paper: Antimicrobial effect of biofilm from chitosan obtained from shrimp shell (Cryphiops caementarius) and muña oil (Minthostachys mollis).</p> <p>Authors: Naysha Y. Meza Elguera, Stephanie E. Sosa Pulcha and Hugo G. Jiménez Pacheco.</p>

Official Closing – Event Virtual

October 26th, 2022 (19:00 – 21:00)

19:00 - 21:00	Official Closing Moderator: Kelem Christine Pereira Jordão, PhD	
	Lecture —Energy Efficiency - Unicamp Sustainable Campus. Speaker: Luiz Carlos Pereira da Silva, PhD	

VIRTUAL EVENT

BT Sym'22

Brazilian Technology Symposium



Sponsor:



ProEC
Pró-Reitoria de
Extensão e Cultura

VIRTUAL EVENT

BT Sym '22

Brazilian Technology Symposium



Thank you very much!