

# BTSym'19

Brazilian Technology Symposium

## Conference Program

November 5, 6 and 7 - 2019  
Universidad Peruana de  
Ciencias Aplicadas, Lima - Perú

### Organization



### Sponsored





# Welcome to the BTSym'2019

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The Brazilian Technology Symposium (BTSym), **ISSN 2447-8326**, is an event created by Laboratory of Visual Communications of the Faculty of Electrical and Computer Engineering at the 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'19 organizing committee invites researchers to attend and submit papers addressing the current research topics of interest. In 2019, the Satellite event after three days in duration, on **November 5, 6 and 7, at the Universidad Peruana de Ciencias Aplicadas, Lima-Perú**. Proceedings of the event will be published by the **Springer** publisher through the book **Proceedings of the 5<sup>th</sup> Brazilian Technology Symposium - Emerging Trends and Challenges in Technology**, and will be submitted for indexing by **Scopus, WoS** and **El Compendex database**.



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# General information

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## Address and Contact Info

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## Contact BTSym Support

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

Email Address:

**[contact.btsym@gmail.com](mailto:contact.btsym@gmail.com)**

## Oral 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.

## Posters

Authors are kindly asked to stay next to their posters during the whole session. Posters not removed by the end of the teardown time will be removed and the organization will not take any responsibility for it.

## Lunch and Coffee break

The registration fee does not include lunch. The coffee break is free for all BTSym'19 attendees.

## Useful Telephone Numbers

Police: 105

Fire Brigade: 116

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

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# Plenary Talks - PANEL 1

## November 5, 2019 – “Bancalari” Auditorium

15:00 - 19:30	<b>Panel discussion 1</b> Automation, Mechatronics and Telecommunications Moderator: Prof. Cristian Del Carpio
	<b>Tema:</b> "The future of telecommunications: Beyond 5G" <b>Speaker:</b> MSc. Diego Pajuelo.
	<b>Paper: Industrial Shop-Floor Integration Based on AMQP and Low-cost Automation</b> Authors: Marcelo Garcia.
	<b>Paper: LQR Predictive Control of Disturbed SISO Time-Delay Processes</b> Authors: Arturo Rojas Moreno.
	<b>Coffee-break</b>
	<b>Paper: An automatic biodiesel decanting system for the optimization of glycerin separation time by applying electric field and temperature</b> Authors: Kevin Bulnes, Diego Paredes, Leonardo Vincés.
	<b>Paper: An automated system for the stage of hydrolysis and filtration in the extraction of pectin from the cocoa shell</b> Authors: Maritza Ccencho, Valeria Quijada, Leonardo Vincés.
	<b>Paper: Engineering Tool for Failures Simulation in Induction Motors</b> Authors: Marcelo Garcia.
	<b>Paper: Patch Antenna Array with ability of beam steering operating at 5G frequency band</b> Authors: Dennis Noel Arizaca Cusicuna, Jorge Luis Arizaca Cusicuna.
	<b>Paper: Gestor de eventos críticos en redes de telecomunicaciones IP utilizando agentes de software</b> Authors: Juan Carlos Zegarra-Vasquez, Nestor Mamani Macedo.

# Plenary Talks - PANEL 2

## November 5, 2019 - “Aula Magna 2 ” Auditorium

15:00 - 19:30	<p><b>Panel discussion 2</b> Business Management, Education and Entrepreneurship <b>Moderator:</b> Prof. Enrique Cardenas</p>
	<p><b>Tema:</b> "Technology Support Centers and the Invention (CATI) in Peru" <b>Speaker:</b> Eng. Jhon Carlos Ríos</p>
	<p><b>Paper: Extreme learning machine for business sales forecasts: A systematic review</b> Authors: Edú Saldaña-Olivas, José Roberto Huamán-Tuesta.</p>
	<p><b>Paper: Modelo de transformación digital sostenible centrado en la cultura organizacional y tecnológica para la gestión académica en la educación superior pública</b> Authors: Jessie Bravo Jaico, Roger Alarcón García, Janet Aquino Lalupú, Nilton German.</p>
	<p><b>Coffee-break</b></p>
	<p><b>Paper: Modelo de compras estratégico para mejorar la rentabilidad de una empresa de servicios textiles mediante herramientas Lean y matriz de Kraljic</b> Authors: Carlos Raymundo, Maricarmen Ramírez, Jose Rojas Garcia, Carlos Torres.</p>
	<p><b>Paper: Proyecto de crecimiento de ventas de una empresa de fabricación y comercialización de mantequillas de frutos secos artesanales en Lima</b> Authors: Pedro Vargas Cermeño, Alicia Villarreal Castro, Carlos Torres Sifuentes, José Rojas García, Carlos Raymundo Ibañez.</p>
	<p><b>Paper: Modelo basado en transformación digital con un enfoque en gestión total de la calidad y Lean Service en una pyme del sector textil para mejorar la productividad</b> Authors: Carlos Raymundo, Erika Briones, Gianmarco Carlos, José Rojas, Carlos Torres.</p>

# Plenary Talks - PANEL 2

## November 5, 2019 - “Aula Magna 2 ” Auditorium

15:00 - 19:30	<b>Panel discussion 2</b> Business Management, Education and Entrepreneurship <b>Moderator:</b> Prof. Enrique Cardenas
	<b>Paper: Modelo combinado de gestión del cambio con técnicas de manufactura esbelta para la mejora de productividad en la producción de sanitarios</b> Authors: Luis José Roca Ramos, Piero Renzo Vargas Zamalloa, Edgardo Gabriel Carvallo Menur, Rosa Fernanda Salas Castro, Iliana Aracelli Macassi Jauregui.
	<b>Paper: Robot Móvil Asistente de Terapias para Niños con Autismo (TEA)</b> Authors: Grimaldo Quispe, Taype Madai Keila.

# Plenary Talks - PANEL 3

## November 6, 2019 - "Bancalari" Auditorium

15:00 - 19:30	<b>Panel discussion 3</b> Signal Processing, Images and Artificial intelligence <b>Moderator:</b> Prof. Guillermo Kemper
	<b>Tema: "Adaptive Signal Processing: applications in communications, images and broadcast networks"</b> <b>Speaker:</b> Dr. Magno Teófilo Madeira da Silva.
	<b>Paper: Correspondence between TOVA test results and characteristics of EEG signals acquired through the MUSE sensor in positions AF7 – AF8</b> Authors: Ober Castillo, Simy Sotomayor, Guillermo Kemper, Vincent Clement.
	<b>Paper: An algorithm oriented to the detection of the level of blood filling in venipuncture tubes based on digital image processing</b> Authors: Jorge Castillo, Nelson Apfata Huallpa, Guillermo Kemper.
	<b>Coffee-break</b>
	<b>Paper: Automatic Leaf Segmentation from Images Taken Under Uncontrolled Conditions Using Convolutional Neural Networks</b> Authors: Itamar Franco Salazar-Reque, Samuel Huamán.
	<b>Paper: A Multispectral Image Compression Algorithm for Small Satellites Based on Wavelet Subband Coding</b> Authors: Joel Telles Castillo, Guillermo Kemper.
	<b>Paper: Glasses with Artificial Vision for Reading Texts</b> Authors: Ernesto Chalaco, David Basantes, Juan Carlos Molina, Gustavo Caiza.

# Plenary Talks - PANEL 3

## November 6, 2019 - “Bancalari” Auditorium

15:00 - 19:30	<b>Panel discussion 3</b> Signal Processing, Images and Artificial intelligence <b>Moderator:</b> Prof. Guillermo Kemper
	<b>Paper: Method of estimating river levels using artificial vision techniques and reflective tapes as a reference</b> Authors: Lidia López, Marco Apolinario, Samuel Huamán.
	<b>Paper: A Comparison of Machine Learning Classifiers for Water-body Segmentation Task in the PeruSAT-1 Imagery</b> Authors: Roger Huauya Mamani, Fidel Moreno, Jonathan Peña, Erwin Dianderas, Antoni Mauricio, Jose Diaz.
	<b>Paper: Method of Anomalies Detection in Avocado Hass Leaves with Thermal and NGRDI Imagery</b> Authors: Bruno Rivadeneyra, Samuel Huamán.

# Plenary Talks - PANEL 4

## November 6, 2019 - "Aula Magna 2 " Auditorium

15:00 - 19:30	<p><b>Panel discussion 4</b>  <b>Infrastructure and Environment</b>  <b>Moderator:</b>  Prof. Gary Duran</p>
	<p><b>Tema:</b> "Application of probabilistic methods in foundations"  <b>Speaker:</b> Dr. Nelson Aoki</p>
	<p><b>Paper: Bacteriological Contaminants Detection in some Salads Vegetables Based-on Spectrophotometry</b>  Authors: Jose Yauri.</p>
	<p><b>Paper: Mamey Apple Peel for Cr3+ Removal from Contaminated Waters</b>  Authors: Nathali Cotrina, Ricardo Vejarano.</p>
	<p><b>Paper: Simulación numérica de las condiciones hidrodinámicas en ríos ante eventos extremos debido al Fenómeno "El Niño" usando HEC-RAS 2D</b>  Authors: Gabriela Alvarez, Alvaro Moreno, Emanuel Guzman, Sissi Santos.</p>
	<p><b>Coffee-break</b></p>
	<p><b>Paper: Diseño geométrico de cruces viales semaforizados utilizando la metodología de Intersecciones de Flujo Continuo (CFI) para la reducción de accidentes en los giros a la izquierda</b>  Authors: Betsi Chuco, Carlos Pérez, Manuel Silvera, Fernando Campos.</p>
	<p><b>Paper: Sistema de control diario para la construcción de proyectos de edificaciones multifamiliares</b>  Authors: Diego Fernandez, Yeffry Zamora, Sandra Rodriguez, Jorge Vilcapoma.</p>
	<p><b>Paper: Uso de tecnologías de adquisición de datos para optimizar los tiempos de monitoreo del progreso de la construcción en edificios residenciales</b>  Authors: Marisol Aronés, Andrea Mendoza, Sandra Rodriguez, Humberto Ramirez.</p>

# Plenary Talks - PANEL 4

## November 6, 2019 - “Aula Magna 2 ” Auditorium

15:00 - 19:30	<b>Panel discussion 4</b> <b>Infrastructure and Environment</b> <b>Moderator:</b> Prof. Gary Duran
	<b>Paper: Propuesta del Factor de Amplificación Dinámico para el Diseño Sismorresistente de Edificios Altos con sistema estructural núcleo rígido</b> Authors: Eder Quezada, Yaneth Serrano, Guillermo Huaco.
	<b>Paper: Microsimulación de paraderos de transporte público para la optimización de tiempos de espera de los usuarios utilizando el modelo de Fuerza Social</b> Authors: Francis Mendoza, Mayling Tong, Manuel Silvera, Fernando Campos.

# Scientific Poster Section – Main space

<b>November 6, 2019</b>	
17:00 - 17:30	<p><b>Paper: An algorithm for detection of raising eyebrows and jaw clenching artifacts in EEG signals using Neurosky Mindwave Headset</b>            Authors: Luis Velez, Guillermo Kemper.</p>
	<p><b>Paper: A mechanical development of a dry cell to obtain HHO from water electrolysis</b>            Authors: Gustavo Salazar, Wilmer Solis, Leonardo Vinces.</p>
	<p><b>Paper: El ecomapa electrónico como instrumento para mejorar la interacción médico-familia en la medicina preventiva</b>            Authors: Nestor Mamani Macedo, Julio Raime, Luzmila Pró, Jaime Pariona, Olga Solano Dávila.</p>
	<p><b>Paper: Estudio del rendimiento académico de estudiantes universitarios mediante modelos estadísticos</b>            Authors: Olga Solano Dávila, Luis Nuñez Lira, Olga Bolaños, Nestor Mamani Macedo.</p>
	<p><b>Paper: Chinese Negotiating Culture and its Influence on the Negotiation Process according to the perception of the Peruvian Negotiator</b>            Authors: Nicole Acevedo.</p>
	<p><b>Paper: Technological solution to identify the level of risk to be diagnosed with Type 2 Diabetes Mellitus using wearables</b>            Authors: Jimmy Armas, Daniela Nuñovero, Ernesto Rodríguez, Paola Gonzalez.</p>
	<p><b>Paper: Wearable Technology for Presumptive Diagnosis of High Blood Pressure based on Risk Factors</b>            Authors: Jimmy Armas, Eithel Meza, Helgar Herrera, Paola Gonzalez.</p>
	<p><b>Paper: El familiograma electrónico como instrumento para mejorar la interacción médico-familia en la medicina preventiva</b>            Authors: Nestor Mamani Macedo, Julio Raime, Luzmila Pró, Jaime Pariona, Olga Solano Dávila.</p>
	<p><b>Paper: Modelo matemático para la mejora del tránsito vertical en universidades</b>            Authors: Grimaldo Quispe, Julio Lazo.</p>



# Plenary Talks - PANEL 5

## November 7, 2019 - "Bancalari" Auditorium

15:00 - 19:30	<b>Panel discussion 5</b> <b>Networks, Computing and Systems information</b> <b>Moderator:</b> Prof. Carlos Raymundo
	<b>Tema:</b> "Data Science and its applications in the industry" <b>Speaker:</b> Dr. Cesar Beltran Castanon
	<b>Paper: Implementation of a fashion virtual assistant with the use of a Kinect v2 camera and image processing</b> Authors: Christopher Vizcarra, Alfredo Barrientos, Gabriel Medina.
	<b>Paper: Modelo de Gestión inteligente para mejorar la calidad de servicio de la red en un entorno IoT en el sector salud</b> Authors: Jessie Bravo Jaico, Roger Alarcón García.
	<b>Paper: Gestión de redes IP desde la perspectiva de la inteligencia artificial distribuida</b> Authors: Juan Carlos Zegarra-Vasquez, Nestor Mamani Macedo.
	<b>Coffee-break</b>
	<b>Paper: English language learning through corrective feedback and mobile applications.</b> Authors: Adriana Guanuche, Gustavo Caiza, Osana Eiriz, Roberto Espí.
	<b>Paper: An Analysis of the Transport Sector and Data Set in a Province of Peru: Forecasting Dropoff Locations for Users</b> Authors: Miguel Arango-Guerrero, Pedro Shiguihara.
	<b>Paper: Reference model to identify the maturity level of Cyber Threat Intelligence on the Dark Web</b> Authors: Jimmy Armas, Ricardo Meléndez, Anthony Aguilar.

# Plenary Talks - PANEL 5

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## November 7, 2019 - “Bancalari” Auditorium

15:00 - 19:30	<b>Panel discussion 5</b> <b>Networks, Computing and Systems information</b> <b>Moderator:</b> Prof. Carlos Raymundo
	<b>Paper: Bike-Sharing management system with the use of IoT</b> Authors: Alfredo Barrientos, Gabriel Benavente, Renato Mercado.
	<b>Paper: Smart Campus IoT guidance system for visitors based on Bayesian filters</b> Authors: Domingo Lazo Ochoa, Segundo Gamarra Quispe, Alvaro Aspilcueta Narvaez, Dennis Núñez Fernández.

# Plenary Talks - PANEL 6

## November 7, 2019 - "Aula Magna 2 " Auditorium

15:00 - 19:30	<p><b>Panel discussion 6</b> Society and Industry <b>Moderator:</b> Prof. Daniel Aderhold</p>
	<p><b>Tema:</b> "Industry 4.0, a new scenario of industrial development" <b>Speaker:</b> " Eng . Luis Alberto Zapata Ojeda.</p>
	<p><b>Paper: Determinación de la tenacidad a la fractura mediante el ensayo de carga puntual para analizar el desgaste de brocas en rocas intrusivas de una mina subterránea en Perú</b> Authors: Carlos Raymundo, Carlos Scottto, Jeancarlo Gamarra, Humberto Pehovaz.</p>
	<p><b>Paper: Modelo del Sistema de Relleno Hidráulico empleando la Granodiorita Intemperizada en Minería Subterránea Convencional</b> Authors: Angela Ochoa, Cristhian Portocarrero, Luis Arauzo, Carlos Raymundo.</p>
	<p><b>Coffee-break</b></p>
	<p><b>Paper: Mejoramiento de la calidad de los procesos de transporte de mineral en minería subterránea mecanizada a través de la metodología Six Sigma</b> Authors: Jorge Huaira, Orlando Llerena, Hugo Solís, Humberto Pehóvaz-Alvarez, and Carlos Raymundo.</p>
	<p><b>Paper: Reducing scraps from a sauce production line in an agroindustrial SME using Lean Manufacturing and DMAIC methodology: A Peruvian Case Study</b> Authors: Carlos Raymundo, Axel Mesones-Guillén, Lizeth Palacios-Jesús, Luis Cardenas.</p>
	<p><b>Paper: Metodología lean para la gestión de desperdicios bajo el enfoque Kanban Conwip en el sector metálmecánica</b> Authors: Carlos Raymundo, Luz Prada-Echevarría, Jorge Chinchay-Grados, Fernando Maradiegue-Tuesta.</p>

# Plenary Talks - PANEL 6

## November 7, 2019 - "Aula Magna 2 " Auditorium

15:00 - 19:30	<b>Panel discussion 6</b> Society and Industry <b>Moderator:</b> Prof. Daniel Aderhold
	<b>Paper: Modelo de producción bajo el enfoque lean manufacturing y la sensibilización al cambio para reducir los retrasos de pedidos de las PYMES del sector confecciones en Perú</b> Authors: Carlos Raymundo, Sheyene León-Guizado, Anthony Castro-Hucharo, Pedro Chavez-Soriano.
	<b>Paper: Factores que limitan el desarrollo industrial de las macroalgas marinas en el distrito de Marcona, Perú</b> Authors: Grimaldo Quispe, Sebastián Santos, Karina Silvera.
	<b>Paper: Aplicación del Lean Manufacturing en el proceso de fabricación de una maquina Plastificadora en una empresa metalmecánica</b> Authors: Grimaldo Quispe, Katherine Camacho, Jenner Saavedra, Yeimy Salvatierra.

# Scientific Poster Section – Main space

**November 7, 2019**

17:00 - 17:30

**Paper: Development of a machine to control the level of washing in Panca chili seeds**

Authors: Anthony De La Cruz, Jaime Cardenas, Leonardo Vincés.

**Paper: Modelo de TI para la captación y formación de talentos en los centros deportivos peruanos**

Authors: Arturo Laredo, Luzmila Pró, Nestor Mamani Macedo, Cesar Astete-Flor.

**Paper: A development of a mobile application for monitoring Siemens S7-1200 controller variables through Firebase**

Authors: Alexander Diaz, Steven Rivera, Leonardo Vincés, Christian del Carpio.

**Paper: High-Dynamic-Range Imaging Using Nanowires**

Authors: Juan Carlos Barbaran, Victor Murray, Munib Wober, Fawwaz Habbal.

**Paper: A Smart Home Control Prototype using a P300-Based Brain Computer Interface for Post-Stroke Patients**

Authors: Sergio Cortez, Christian Flores Vega, Javier Andreu-Perez.

**Paper: Data Visualization Techniques for Monitoring Real-Time Information of Cold Chain**

Authors: Jerson Rivas-Tucto, Nora Castillo-Talexio, Pedro Shiguihara.

**Paper: Implementation of a real time communication library between smart tv devices and Android devices based on WebSocket for the development of applications**

Authors: Alfredo Barrientos, Miguel Blas, Gian Franco Gabriel.

**Paper: Evaluation method of variables and indicators for Surgery Block process using Process Mining and Data Visualization**

Authors: Jimmy Armas, Piero Rojas, Arturo Villantoy, Santiago Aguirre.

**Paper: Políticas de seguridad de la información en función del comportamiento de los usuarios de TI en el sector microfinanciero de Lambayeque, Perú**

Authors: Ernesto Celi, Regis Diaz.

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