WACCI 2024 - PROGRAM

Tuesday November 26th

8:30-9:00AM – *Registration*

9:00-9:15AM – *Opening Words by the Workshop Chairs*

9:15-10:00AM – **David Brady**, University of Arizona, USA – Keynote: "Phase and coherence in computational imaging systems" **Keynote Talk**

10:00-10:15AM – **Esteban Vera,** Pontificia Universidad Católica de Valparaíso, Chile: "Computational Imaging for Space Applications"

10:15-10:30AM – **Travis Tubbs,** AFOSR/SOARD: **"**AFOSR/ONRG/USArmy Funding Opportunities"

10:30-11:00AM – *Coffee Break*

11:00-11:30AM – **Pascal Picart**, Le Mans Université, France: "Advances in noise modeling and reduction in dual-wavelength digital holographic imaging" **Invited talk**

11:30-11:45AM – **Ali Godoy**, Universidad de Santiago de Chile, Chile: "Innovative Low-Cost detection of sickle cell disease using digital lensless holographic microscopy"

11:45-12:00PM – **Juan Llaguno**, Universidad de la República, Uruguay: "Physics-guided deep learning reconstruction applied to off-axis digital holography microscopy"

12:00-12:30PM – **Jorge García-Sucerquia**, Universidad Nacional, Colombia: "Digital lensless holographic microscopy: fundamentals, application, and forecasted future" **Invited talk**

12:30-2:00PM *– Lunch Break (on your own)*

2:00-2:30PM – **Marcus Carlsson**, Lund University, Sweden: "Single-distance nano-holotomography with coded apertures" **Invited talk**

2:30-2:45PM – **Vicente Westerhout**, Pontificia Universidad Católica de Valparaíso, Chile: "Analysis of events generation rates on recordings in space situational awareness"

2:45-3:00PM – **Josefa Silva**, Universidad de la Frontera, Chile: "Coded aperture design for temporal compressive imaging in a color-polarized video"

3:00-3:30PM – **Nelson Díaz**, Pontificia Universidad Católica de Valparaíso, Chile: "Computational Imaging for Extended-Depth-of-Field"

3:30-4:00PM – *Coffee Break*

4:00-4:15PM – **Eduardo Peters**, Universidad de la Frontera, Chile: "Phase Retrieval by Binary Amplitude Modulation using Talbot Effect"

4:15-4:30PM – **Alejandro Silva,** Universidad de la República, Uruguay: "Transport of Intensity Equation in Microscopy: improvements in algorithms and biological applications"

4:30-4:45PM – **Nicolás Alegría**, Pontificia Universidad Católica de Valparaíso, Chile: "Joint design of Fourier-based wavefront sensors for extended dynamic range"

4:45-5:30PM – **Enrique Tajahuerce**, Universitat Jaume I, Spain: "Structured illumination microscopy with single-pixel detection" **Keynote Talk**

Wednesday November 27th

9:00-9:45AM – **Gonzalo Arce**, University of Delaware, USA: "Surface Topography and Vegetation Sensing and Reconstruction Systems" **Keynote talk**

9:45-10:00AM – **Alejandro Alvarado**, Pontificia Universidad Católica de Valparaíso, Chile: "Regular vs Irregular Sphere Packing for Compressive Spectral Imaging"

10:00-10:15AM – **Pablo Meza**, Universidad de la Frontera, Chile: "Information Processing Laboratory + some research"

10:15-10:30AM – **Sonia Wolff,** ONRG: **"**AFOSR/ONRG/USArmy Funding Opportunities"

10:30-11:00AM – *Coffee Break*

11:00-11:30AM – **Kristina Irsch**, Institut de la Vision, France: "Computational microscopy of the eye" **Invited talk**

11:30-11:45AM – **Miguel Arocena**, Universidad de la República, Uruguay: "Quantitative phase microscopy for studying cell responses to stress"

11:45-12:00PM – **Edson Mojica**, Universidad de la Frontera, Chile: "Single Pixel Imaging with a Shifted coded aperture"

12:00-12:30PM – **Leonel Malacrida**, Institut Pasteur & Universidad de la República, Uruguay: "PhasorPy for phasor plots analysis of Fluorescence Lifetime Microscopy and Hyperspectral Imaging" **Invited talk**

12:30-2:00PM *– Lunch Break (on your own)*

2:00-2:45PM – **Yuzuru Takashima**, University of Arizona, USA: "Lidar, Near-to-Eye AR Display, and Imaging by Angular and Spatial Light Modulation Technique with Texas Instruments Digital Micromirror Device" **Keynote talk**

2:45-3:00PM – **Ariel Fernández**, Universidad de la República, Uruguay: "Recent advances in Mueller matrix microscopy: whole slide and single-shot imaging"

3:00-3:30PM – **Miguel Heredia Conde**, University of Wuppertal, Germany: "Recent Advances in Computational Time-of-Flight Imaging" **Invited talk**

3:30-5:00PM – *Coffee Break + Poster Session

***8:00-10:00PM – Workshop banquet at Uruguay Natural Parrilla Gourmet* (Dr. Héctor Miranda 2432)**

Thursday November 28th

9:00-9:45AM – **Rafael Piestun,** University of Colorado, USA: "Endomicroscopy with hair-thin probes" **Keynote talk**

9:45-10:00AM – **Felipe Guzmán**, Pontificia Universidad Católica de Valparaíso, Chile: "Experimental Validation of Snapshot Compressive Video in Scattering Media"

10:00-10:15AM – **Julia Alonso**, Universidad de la República, Uruguay: "Computational Imaging for Biomedical applications"

10:15-10:30AM – **José Larenas / Harry Durette,** USArmy AFC-Americas: **"**AFOSR/ONRG/USArmy Funding Opportunities"

10:30-11:00AM – *Coffee Break*

11:00-11:30AM – **Pablo Musé**, Universidad de la República, Uruguay: "Blind Motion Prediction and Deblurring from a Single Image" **Invited talk**

11:30-11:45AM – **David Morales-Norato,** Universidad Industrial de Santander, Colombia: "PSF regularizations for privacy preserving multimodal action recognition"

11:45-12:00PM – **Esley Torres,** Universidad de la República, Uruguay: "Beyong the Sparrow limit by MeanShift"

12:00-12:30PM – **Matías Di Martino**, Universidad Católica, Uruguay: "Recent advances in computer vision" **Invited talk**

12:30-2:00PM – *Lunch Break (on your own)*

2:00-2:30PM – **Julián Tachella**, CNRS, France: "Self-supervised learning for imaging inverse problems" **Invited talk**

2:30-2:45PM – **Edgar Salazar**, Universidad Privada Boliviana, Bolivia: "A Gray-Scale Coding Approach for Compressive X-ray Compton Backscattering Imaging"

2:45-3:00PM – **Jorge Guaiquil**, Universidad de la Frontera, Chile: "Compressed spectral-depth estimation via a dual-dispersive CASSI architecture"

3:00-3:30PM – **Jorge Bacca**, Universidad Industrial de Santander, Colombia: "Unlimited Sampling: Algorithms and Imaging Applications"

3:30-4:00PM – *Coffee Break*

4:00-4:30PM – **Federico Lecumberry**, Universidad de la República, Uruguay: "Computational Super-Resolution Microscopy" **Invited talk**

4:30-5:15PM – **Amit Ashok**, University of Arizona, USA: "Quantum-inspired Imaging and Sensing" **Keynote talk**

5:15-5:30PM – *Closing Remarks by the Chairs & Poster Awards*

Friday November 29th

9:00AM-6:00PM – optional *tour to Colonia del Sacramento (check-in at registration)*

(*) Poster Session (Wednesday 3:30-5:00PM)

Authors	Title
Arturo Osorio Optolab and Esteban Vera	Compact Adaptive Optics System using a Deformable Lens for a 0.5m Ritchey Chretien telescope
Roman Demczylo, Diego Silva Piedra, Federico Lecumberry, Leonel Malacrida and Ariel Fernández	Mueller matrix polarimetry and hyperspectral autofluorescence imaging for histopathological diagnosis without the use of markers
Brayan Monroy, Kebin Contreras and Jorge Bacca	Modulo Imaging: Algorithms and Applications
Sebastián Valdivia and Esteban Vera	All-Sky Surveillance for Space Situational Awareness: A Real-Time Neuromorphic System
Exequiel Oliva, Benjamín Gac, Alejandro Alvarado, Camilo Weinberger, Jorge Tapia, Nelson Díaz and Esteban Vera	Hardware-in-the-Loop Framework for Diffractive Optics Design for Multispectral Classification
Emmanuel Martinez, Kebin Contreras, Henry Arguello and Jorge Bacca	End-to-End Band Selection for HSI Classification
Eduardo Sepulveda, Jinyang Liang and Pablo Meza	Compressed optical Shack-Hartmann ultrafast photography

Vicente Cisternas and Asticio Vargas	Iteration Reduction for Mueller Matrix Calculation Using Orthogonal Camera System
Daniela Fritz, Hector Vargas, Edson Mojica and Pablo Meza	Object Tracking System Based on Phase Modulation
Kebin Contreras, Emmanuel Martinez, Brayan Monroy, Tatiana Gelvez Barrera, Hans Garcia, Henry Arguello and Jorge Bacca	Spectral Assessment for Cocoa Quality
Benjamin Gonzalez, Nicolas Hernandez, Bastian Romero and Esteban Vera	Real-time control loop implementation of adaptive optics systems based on deep learning
Rodrigo Muñoz, Felipe Guzmán, Nicolas Hernández and Esteban Vera	Development of a Hologram Printer for Holographic Wavefront Sensors
Diego Hernandez, Daniel Yunge and Esteban Vera	Embedded Systems for Object Detection Using Neuromorphic Event Cameras and FPGA Video Libraries in Astronomical Observatories v2
Vladimir Cisternas, Vicente Westerhout and Esteban Vera	Development of an autofocus algorithm for event-based cameras for space awareness and astronomical applications