

1 Publications List

Dr. Carlos A. Osorio Quero

- [1] C. Osorio Quero, D. Durini, and J. Martinez-Carranza. “ViT-Based Classification and Self-Supervised 3D Human Mesh Generation from NIR Single-Pixel Imaging”. In: *Applied Sciences* 15.11 (2025). ISSN: 2076-3417. DOI: [10.3390/app15116138](https://doi.org/10.3390/app15116138). URL: <https://www.mdpi.com/2076-3417/15/11/6138>.
- [2] C. O. Quero and J. Martinez-Carranza. “Unmanned aerial systems in search and rescue: A global perspective on current challenges and future applications”. In: *International Journal of Disaster Risk Reduction* 118 (2025), p. 105199. ISSN: 2212-4209. DOI: <https://doi.org/10.1016/j.ijdr.2025.105199>. URL: <https://www.sciencedirect.com/science/article/pii/S2212420925000238>.
- [3] C. O. Quero, I. Rondon, and J. Martinez-Carranza. “Improving NIR single-pixel imaging: using deep image prior and GANs”. In: *J. Opt. Soc. Am. A* 42.2 (Feb. 2025), pp. 201–210. DOI: [10.1364/JOSAA.541763](https://doi.org/10.1364/JOSAA.541763). URL: <https://opg.optica.org/josaa/abstract.cfm?URI=josaa-42-2-201>.
- [4] C. A. Osorio Quero and J. Martinez-Carranza. “Physics-Informed Machine Learning for UAV Control”. In: *2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE)*. 2024, pp. 1–6. DOI: [10.1109/CCE62852.2024.10770871](https://doi.org/10.1109/CCE62852.2024.10770871).
- [5] C. O. Quero, D. Leykam, and I. R. Ojeda. “Res-U2Net: untrained deep learning for phase retrieval and image reconstruction”. In: *J. Opt. Soc. Am. A* 41.5 (Apr. 2024), pp. 766–773. DOI: [10.1364/JOSAA.511074](https://doi.org/10.1364/JOSAA.511074). URL: <https://opg.optica.org/josaa/abstract.cfm?URI=josaa-41-5-766>.
- [6] C. O. Quero, D. Durini, J. de Jesús Rangel-Magdaleno, J. Martinez-Carranza, and R. Ramos-Garcia. “Emerging Vision Technology: SPI Camera an Overview”. In: *IEEE Instrumentation Measurement Magazine* 27.2 (2024), pp. 38–47. DOI: [10.1109/MIM.2024.10472984](https://doi.org/10.1109/MIM.2024.10472984).
- [7] C. O. Quero, D. Durini, J. Rangel-Magdaleno, J. Martinez-Carranza, and R. Ramos-Garcia. “Enhancing 3D human pose estimation with NIR single-pixel imaging and time-of-flight technology: a deep learning approach”. In: *J. Opt. Soc. Am. A* 41.3 (Mar. 2024), pp. 414–423. DOI: [10.1364/JOSAA.499933](https://doi.org/10.1364/JOSAA.499933). URL: <https://opg.optica.org/josaa/abstract.cfm?URI=josaa-41-3-414>.
- [8] C. O. Quero, J. A. C. Martinez, and R. Ramos-Garcia. “Res-U2Net: Augmenting 2D/3D Image Reconstruction through Untrained Deep Learning Models for Phase Retrieval Enhancement”. In: *2023 20th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE)*. 2023, pp. 1–6. DOI: [10.1109/CCE60043.2023.10332844](https://doi.org/10.1109/CCE60043.2023.10332844).
- [9] C. O. Quero, D. Durini, J. Rangel-Magdaleno, J. Martinez-Carranza, and R. Ramos-Garcia. “3D Human Pose reconstruction Single-pixel imaging”. In: *14th annual International Micro Air Vehicle Conference and Competition*. Ed. by D. Moormann. Paper no. IMAV2023-4. Aachen, Germany, Sept. 2023, pp. 33–39. URL: <http://www.imavs.org/papers/2023/4.pdf>.
- [10] C. O. Quero, D. Durini, J. Rangel-Magdaleno, J. Martinez-Carranza, and R. Ramos-Garcia. “Deep-learning blurring correction of images obtained from NIR single-pixel imaging”. In: *J. Opt. Soc. Am. A* 40.8 (Aug. 2023), pp. 1491–1499. DOI: [10.1364/JOSAA.488549](https://doi.org/10.1364/JOSAA.488549). URL: <https://opg.optica.org/josaa/abstract.cfm?URI=josaa-40-8-1491>.
- [11] C. Osorio, J. J. Rangel-Magdaleno, J. Martinez-Carranza, and D. Durini. “Real-Time NIR Single-Pixel Imaging for Gait Recognition”. In: *Workshop on Scientific Use of Machine Learning on Low-Power Devices: Applications and Advanced Topics (smr 3832)*. Presented at the ICTP Workshop on Scientific Use of Machine Learning on Low-Power Devices. The Abdus Salam International Centre for Theoretical Physics (ICTP). Apr. 2023.
- [12] C. A. O. Quero, D. Durini, J. d. J. Rangel-Magdaleno, J. Martinez-Carranza, and R. Ramos-Garcia. “2D NIR-SPI spatial resolution evaluation under scattering condition”. In: *2022 19th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE)*. 2022, pp. 1–6. DOI: [10.1109/CCE56709.2022.9975875](https://doi.org/10.1109/CCE56709.2022.9975875).
- [13] C. A. Quero, D. Durini, J. de Jesús Magdaleno, J. Martinez-Carranza, and R. Ramos-Garcia. “Fast NIR-Single-Pixel-Imaging enhancement under scattering environment”. In: *13th International Micro Air Vehicle Conference*. Ed. by G. de Croon and C. D. Wagter. Paper no. IMAV2022-6. Delft, the Netherlands, Sept. 2022, pp. 53–58. URL: <http://www.imavs.org/papers/2022/6.pdf>.

- [14] C. Osorio Quero, D. Durini, J. Rangel-Magdaleno, J. Martinez-Carranza, and R. Ramos-Garcia. “Single-Pixel Near-Infrared 3D Image Reconstruction in Outdoor Conditions”. In: *Micromachines* 13.5 (2022). ISSN: 2072-666X. DOI: [10.3390/mi13050795](https://doi.org/10.3390/mi13050795). URL: <https://www.mdpi.com/2072-666X/13/5/795>.
- [15] A. Manjarres Garcia, C. Osorio Quero, J. Rangel-Magdaleno, J. Martinez-Carranza, and D. Durini Romero. “Parallel-Pipeline Fast Walsh-Hadamard Transform Implementation Using HLS”. In: *2021 International Conference on Field-Programmable Technology (ICFPT)*. 2021, pp. 1–4. DOI: [10.1109/ICFPT52863.2021.9609874](https://doi.org/10.1109/ICFPT52863.2021.9609874).
- [16] C. O. Quero, D. D. Romero, J. Rangel-Magdaleno, J. M. Carranza, and R. Ramos-Garcia. “2D/3D single-pixel NIR image reconstruction method for outdoor applications in presence of rain”. In: *SPIE Future Sensing Technologies 2021*. Ed. by M. Kimata, J. A. Shaw, and C. R. Valenta. Vol. 11914. International Society for Optics and Photonics. SPIE, 2021, p. 1191415. DOI: [10.1117/12.2601118](https://doi.org/10.1117/12.2601118). URL: <https://doi.org/10.1117/12.2601118>.
- [17] C. O. Quero, A. M. García, D. Durini, J. Rangel-Magdaleno, J. Martinez-Carranza, and R. Ramos-Garcia. “Toward a single-pixel near-infrared low-resolution 2D image reconstruction strategy”. In: *2021 18th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE)*. 2021, pp. 1–6. DOI: [10.1109/CCE53527.2021.9633097](https://doi.org/10.1109/CCE53527.2021.9633097).
- [18] A. M. García, C. O. Quero, J. Rangel-Magdaleno, J. Martinez-Carranza, and D. D. Romero. “Edge computing SoC implementation of compressive sensing algorithm for single-pixel cameras”. In: *2021 18th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE)*. 2021, pp. 1–5. DOI: [10.1109/CCE53527.2021.9633023](https://doi.org/10.1109/CCE53527.2021.9633023).
- [19] C. A. O. Quero, D. D. R. D. Romero, J. Rangel-Magdaleno, J. Martínez-Carranza, and R. Ramos-Garcia. “3D Reconstruction based on NIR single-pixel for drone navigation under rainy condition”. In: *12th International Micro Air Vehicle Conference*. Ed. by J. Martinez-Carranza. Paper no. IMAV2021-24. Puebla, México, Nov. 2021, pp. 188–195. URL: <http://www.imavs.org/papers/2021/24.pdf>.
- [20] C. A. Osorio Quero, D. Durini, J. Rangel-Magdaleno, and J. Martinez-Carranza. “Single-pixel imaging: An overview of different methods to be used for 3D space reconstruction in harsh environments”. In: *Review of Scientific Instruments* 92.11 (Nov. 2021), p. 111501. ISSN: 0034-6748. DOI: [10.1063/5.0050358](https://doi.org/10.1063/5.0050358). eprint: https://pubs.aip.org/aip/rsi/article-pdf/doi/10.1063/5.0050358/15597770/111501_1_online.pdf. URL: <https://doi.org/10.1063/5.0050358>.
- [21] C. A. Osorio Quero, D. D. Romero, R. Ramos-Garcia, J. de Jesus Rangel-Magdaleno, and J. Martinez-Carranza. “Towards a 3D Vision System based on Single-Pixel imaging and indirect Time-of-Flight for drone applications”. In: *2020 17th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE)*. 2020, pp. 1–6. DOI: [10.1109/CCE50788.2020.9299125](https://doi.org/10.1109/CCE50788.2020.9299125).
- [22] C. O. Quero, D. Durini, R. Ramos-García, J. Rangel-Magdaleno, J. Martinez-Carranza, J. L. Olvera, and A. Corona. “Implementation of a hyperspectral integrated vision system combining radar technology and single-pixel optical principle for unmanned ground vehicles (UGV)”. In: *Radar Sensor Technology XXIV*. Ed. by K. I. Ranney and A. M. Raynal. Vol. 11408. International Society for Optics and Photonics. SPIE, 2020, p. 1140815. DOI: [10.1117/12.2558929](https://doi.org/10.1117/12.2558929). URL: <https://doi.org/10.1117/12.2558929>.
- [23] C. O. Quero, D. Durini, R. Ramos-Garcia, J. Rangel-Magdaleno, and J. Martinez-Carranza. “Evaluation of a 3D imaging vision system based on a single-pixel InGaAs detector and the time-of-flight principle for drones”. In: *Three-Dimensional Imaging, Visualization, and Display 2020*. Ed. by B. Javidi, M. Martínez-Corral, O. Matoba, and A. Stern. Vol. 11402. International Society for Optics and Photonics. SPIE, 2020, 114020T. DOI: [10.1117/12.2558918](https://doi.org/10.1117/12.2558918). URL: <https://doi.org/10.1117/12.2558918>.
- [24] C. O. Quero, D. Durini, R. Ramos-Garcia, J. Rangel-Magdaleno, and J. Martinez-Carranza. “Hardware parallel architecture proposed to accelerate the orthogonal matching pursuit compressive sensing reconstruction”. In: *Computational Imaging V*. Ed. by L. Tian, J. C. Petrucci, and C. Preza. Vol. 11396. International Society for Optics and Photonics. SPIE, 2020, 113960N. DOI: [10.1117/12.2558937](https://doi.org/10.1117/12.2558937). URL: <https://doi.org/10.1117/12.2558937>.

- [25] C. Osorio. *Método de estimación de carga para baterías de Litio Polímero basado en Filtro Kalman Extendido Adaptativo (AEKF)*. ResearchGate. Jan. 2016. DOI: [10.13140/RG.2.1.4540.2642](https://doi.org/10.13140/RG.2.1.4540.2642). URL: <https://doi.org/10.13140/RG.2.1.4540.2642>.
- [26] C. Quero. “Método de estimación de carga para baterías de Litio Polímero basado en Filtro Kalman Extendido Robusto”. Spanish. In: *Universidad Simón Bolívar - Grupo Electrónica de Potencia*. Conference presentation. Sept. 2015. DOI: [10.13140/RG.2.1.4996.8722](https://doi.org/10.13140/RG.2.1.4996.8722).
- [27] A. Vidal, G. Viesti, C. Osorio, F. Pino, A. Horvath, H. Barros, M. Caldogno, E. D. Greaves, and L. Sajo-Bohus. “Multiphase monitoring by annihilation radiation coincidence mode”. In: *AIP Conference Proceedings* 1423.1 (Feb. 2012), pp. 414–417. ISSN: 0094-243X. DOI: [10.1063/1.3688838](https://doi.org/10.1063/1.3688838). eprint: https://pubs.aip.org/aip/acp/article-pdf/1423/1/414/11688602/414_1_online.pdf. URL: <https://doi.org/10.1063/1.3688838>.
- [28] C. Osorio. “AUSB2009-130103 SISTEMA DE TELEMETRIA DEL VEHICULO SOLAR ARAGUANAY”. In: Nov. 2009. DOI: [10.13140/RG.2.1.1752.8400](https://doi.org/10.13140/RG.2.1.1752.8400).
- [29] L. Sajó-Bohus, W. A. Gonzalez, C. Osorio, J. K. Pálfalvi, P. Nemeth, J. Walter, D. Palacios, and H. Barros. “Nuclear Track Analyser with IMAQ™ Vision Builder 6 From National Instruments”. In: *Proceedings of the 23rd International Conference on Nuclear Tracks in Solids*. Preferred presentation: ORAL. Beijing, China, Sept. 2006. URL: https://www.researchgate.net/publication/390704746_Nuclear_Track#fullTextFileContent.

Preprint

- [30] C. O. Quero and J. Carranza-Martinez. In: *ADRC-Driven Trajectory Control of a Quadcopter Considering Ground Effect Dynamics*. 2025. DOI: [xxx](#).
- [31] C. O. Quero and J. Carranza-Martinez. In: *CNN-Based DPU for Radio Frequency Signal Classification in Rescue Applications*. 2025. DOI: [xxx](#).
- [32] C. A. O. Quero and J. Martinez-Carranza. “Real-Time Acceleration of Fast Hadamard Single-Pixel Imaging using Advanced GPU Parallel Computing”. In: *Journal of Parallel and Distributed Computing* (xx 2025). Accessed on 06/11/25. URL: <https://www.sciencedirect.com/journal/journal-of-parallel-and-distributed-computing>.
- [33] C. A. O. Quero and J. Martinez-Carranza. “Quantized SEFSNet: A Resource-Efficient Approach to RF Signal Identification for UAV-Assisted Disaster Navigation”. In: *Digital Signal Processing* (xx 2025). Accessed on 03/03/25. URL: <https://www.sciencedirect.com/journal/digital-signal-processing>.
- [34] C. A. O. Quero. “Physics-Informed Neural Network for Denoising Images Using Nonlinear PDE”. In: *Applied Optics* (xx 2024). Accessed on 11/05/24. URL: <https://opg.optica.org/josaa/home.cfm>.

Book Chapter

- [35] C. A. O. Quero and J. Martinez-Carranza. “CNN-Quantized Based RF Signal Identification for UAV Disaster Navigation”. In: *CRC Press from the Taylor Francis Group* (June 2025). Accessed on 06/11/25. URL: <https://femexrobotica.org/mexcir2025/index.php/cfc/>.

PhD Thesis

- [36] C. Osorio. “Three-dimensional hyperspectral camera based on near-infrared single-pixel imaging”. PhD thesis. Sept. 2022. DOI: [10.13140/RG.2.2.15604.97923](https://doi.org/10.13140/RG.2.2.15604.97923).

Patents

- [37] C. O. Quero. “3D-NIR Enlarged Creation Image System and Method”. Patent MX/a/2022/016091. INAOE. 2022.
- [38] C. O. Quero. “Hybrid 3D imaging system”. Patent MX/a/2020/012197. INAOE. 2020.