**Faculty Profile: Daniel Sierra-Sosa**

Assistant Professor

Department: Electrical Engineering and Computer Science

School: School of Engineering

Email: [sierrasosa@cua.edu](mailto:sierrasosa@cua.edu)

Phone: 202-319-4263

Education: Ph.D, Physics, Universidad Nacional de La Plata, Argentina, 2015

**Research Interests and Expertise:**

Quantum Computing, Artificial Intelligence, Quantum Machine Learning, Machine Learning, Data Science.

**Biography:**

Dr. Daniel Sierra-Sosa is an Assistant Professor in the Department of Electrical Engineering and Computer Science at The Catholic University of America. He is an active researcher in the fields of quantum computing, machine learning, healthcare data processing, image processing, and data analytics. He has been involved in multiple research activities, including industry contracts, collaborations with public health entities, and other academic partners; in addition to his involvement in academic research proposals. Prior to joining The Catholic University of America, he participated in a collaborative industry initiative with a healthcare company, working on projects that included mobile application development, virtual reality, medical imaging, and predictive analytics. He has led various projects and has taken significant responsibilities in mentoring graduate and undergraduate students. He is the co-author and lead author of several manuscripts published in recognized journals. Dr. Sierra-Sosa is also a Qiskit Advocate and a certified instructor in quantum computing, data science, and artificial intelligence.

**Five Selected Papers:**

1. Decoodt, P., Sierra-Sosa, D., Anghel, L., Cuminetti, G., De Keyzer, E., & Morissens, M. (2024). Transfer Learning Video Classification of Preserved, Mid-Range, and Reduced Left Ventricular Ejection Fraction in Echocardiography. *Diagnostics*, *14*(13), 1439.
2. Decoodt, P., Liang, T. J., Bopardikar, S., Santhanam, H., Eyembe, A., Garcia-Zapirain, B., & Sierra-Sosa, D. (2023). Hybrid classical–quantum transfer learning for cardiomegaly detection in chest x-rays. *Journal of imaging*, *9*(7), 128.
3. Sierra-Sosa, D., Pal, S., & Telahun, M. (2023). Data rotation and its influence on quantum encoding. *Quantum Information Processing*, *22*(1), 89.
4. Maheshwari, D., Sierra-Sosa, D., & Garcia-Zapirain, B. (2021). Variational quantum classifier for binary classification: Real vs synthetic dataset. *IEEE access*, *10*, 3705-3715.
5. Sierra-Sosa, D., Garcia-Zapirain, B., Castillo, C., Oleagordia, I., Nuno-Solinis, R., Urtaran-Laresgoiti, M., & Elmaghraby, A. (2019). Scalable healthcare assessment for diabetic patients using deep learning on multiple GPUs. IEEE transactions on industrial informatics, 15(10), 5682-5689.

**Professional Activities (please also include STEM education/diversity/outreach activities)**

* IBM Certified Associate Developer - Quantum Computation using Qiskit v0.2X.
* IBM Qiskit Advocate.
* Mentor at the Qiskit Advocate Mentorship Program.
* Technical Program Chair in the event “IEEE International Symposium on Signal Processing and Information Technology” (2018, 2017) – Louisville, Kentucky – US.
* NSF Reviewer.
* NIH Reviewer,
* Reviewer for Agència Valenciana d’Avaluació i Prospectiva (AVAP), Spain.