

Daniel Alejandro Lopez Montiel

Biomedical Engineer

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https://github.com/Montiel23 📄 Google Scholar

Available days: **From Monday to Friday (Full Time)**

Research area and interests: **Deep Learning, Computer Vision, Computer-Aided Diagnosis, Quantum Computing, High Performance Computing, Quantum Machine Learning**

SUMMARY

I graduated with honors as a Biomedical Engineer at the Tecnológico Nacional de México - Instituto Tecnológico de Tijuana (ITT-TecNM) in 2021. I'm currently studying a Master of Science degree in Digital Systems at Centro de Investigación y Desarrollo de Tecnología Digital (CITEDI), related to the development of classical-quantum hybrid methods for computer-aided diagnosis of spine fractures in medical images. My main interests are machine and deep learning, high performance computing, quantum computing, computer-aided diagnosis and quantum machine learning.

SKILLS

- **Machine Learning Development** • **Data Analysis** • **Dataset Building** • **Hybrid Quantum Algorithms**
- **Research:** Attention to Detail, Time Management, Problem-Solving, Results Showcase, Experiment Designing, Data Analysis, Results Interpretation, Statistical Analysis.
- **Tools:** Python, PyTorch, TensorFlow, Keras, Pandas, Alumentations, Scikit-learn, Bash Scripting, Windows, Linux, Command Line Interface, Vim, Git, Docker, Microsoft Office, LaTeX, Beamer.
- **Machine Learning:** Linear Algebra, Calculus, Probability and Statistics, Optimization, Convolutional Neural Networks, and Supervised Learning.
- **Computer Vision Tasks:** Image Classification, Semantic Segmentation.
- **Areas of Expertise:** Computer-Aided Diagnosis, Classical-Quantum Computing, Convolutional Neural Networks, Image Classification.
- **Languages:** Spanish (Native Speaker), 🇬🇧 English (Oxford Tutorial College English Certificate C2, Advanced, Bilingual), 🇯🇵 Japanese (UNISER 6th level, Intermediate, Proficient).

SCIENTIFIC PRODUCTS

📖 Springer Book Chapter

Lopez Montiel D., Montiel Ross O., Lopez-Montiel M., Sánchez-Adame M., Castillo O. (2022) Quanvolutional Neural Network Applied to MNIST. In: Melin P., Castillo O. (eds) Hybrid Intelligent Models: Theory and Applications. Studies in Computational Intelligence, Springer, https://doi.org/10.1007/978-3-031-28999-6_4.

📖 SPIE 2023 Conference Proceedings

Lopez Montiel D., Montiel Ross O., Lopez-Montiel M., Castillo O. (2023) Quantum computing meets skin cancer diagnosis. In: Khan M., Abdul A., Díaz V. (eds) Optics and Photonics for Information Processing XVII. Proc. of SPIE Vol. 12673, <https://doi.org/10.1117/12.2675446>.

📖 Open Access Research Paper

Lopez-Montiel M., Lopez Montiel D., Montiel Ross O., (2023) JetSeg: Efficient Real-Time Semantic Segmentation Model for Low-Power GPU-Embedded Systems, Computer Vision and Pattern Recognition (cs.CV); Artificial Intelligence (cs.AI); Machine Learning (cs.LG), arXiv:23.11419, <https://doi.org/10.48550/arXiv.2305.11419>

EDUCATION

Master <i>Master of Science in Digital Systems</i> Centro de Investigación y Desarrollo de Tecnología Digital (CITEDI - IPN) 📍 🏛️	August 2022 – August 2024 Tijuana, Baja California
Bachelor's Specialization <i>Biomedical Technologies</i> Instituto Tecnológico de Tijuana - Tecnológico Nacional de México (ITT - TecNM) 📍 🏛️	August 2020 – December 2021 Tijuana, Baja California
🎓 Bachelor's Degree <i>Biomedical Engineering</i> Instituto Tecnológico de Tijuana (ITT - TecNM) 📍 🏛️	August 2017 – December 2021 Tijuana, Baja California

COURSES

📖 Advanced English Course skills acquired: Advanced English communication and writing skills.	January 2023 Oxford International, Vancouver, Canada
📖 Leadership Training Program skills acquired: Leadership and soft skills proficiency.	January 2023 University of British Columbia, Vancouver, Canada
📖 Business English Course skills acquired: Advanced English communication skills for in-work applications.	April 2023 Alphable, Remote
📖 Admin Office Internship Program skills acquired: In-work experience, communication and administrative skills.	July 2023 Oxford International, London, England

AWARDS

🏆 Academic Merit 2nd Place for best academic trajectory.	August 2023 Town Award, Tijuana, Baja California, México
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References:
Available upon request.