

# 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) Quantvolutional Neural Network Applied to MNIST. In: Melin P., Castillo O. (eds) Hybrid Intelligent Models: Theory and Applications. Studies in Computational Intelligence, Springer.
- 📄 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.
- 📄 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

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

## COURSES

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

## AWARDS

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| <b>🏆 Academic Merit</b><br>2nd Place for best academic trajectory. | August 2023<br>Town Award, Tijuana, Baja California, México |
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References:  
**Available upon request.**