



Eduardo de Jesús Dávila Meza, Ph.D.

AI/ML · Computer Vision · Embedded Systems · ROS
Engineer · Researcher · Educator

- Man (male)
- Mexican
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- EduardoDavila-AI
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- HackerRank: eduardodavila94
- ORCID: 0000-0002-3493-400X
- Professional portfolio
- Federal professional certificates
Bachelor's: 12027207
Master's: 14043743

Technical Skills

- Linux (Ubuntu), Windows
- Python, C++, SQL, MATLAB, MPLAB, Arduino
- OpenCV, TensorFlow, ROS & ROS 2
- JSON, Keras, Matplotlib, NumPy, Pandas, PIL, Scikit-learn, Tkinter
- VS Code, Jupyter Notebook, Git, GitHub
- SOLIDWORKS, PROTEUS, LabVIEW
- LaTeX, Markdown, MS Office, Dia (diagrams)

Other Skills

- Self-taught
- Communication
- Goal-oriented
- Positive attitude
- Proactive
- Responsible
- Teamwork
- Customer support

Languages

- Spanish** | Native: full professional proficiency.
- English** | B2 (Advanced): fluent in reading, writing, and technical comprehension; intermediate spoken; proficient for research publications, documentation, and international collaboration. Certified by Cinvestav, Guadalajara Campus, Feb. 2023.

Work Experience & Projects

- Mar. - Jun. 2025**
★ Robot Programming Professor Tecnológico de Monterrey, Gdl.
Led courses on ROS (Robot Operating System) and ROS 2 for students in Robotics and Intelligent Systems Engineering, focusing on software development for differential drive robots. Recognized as a top-rated professor (See recognition). See repository
- Apr. - Jul. 2024**
★ AI/ML Engineer Recognition of Fundus Pathologies
Collaborated with German eye hospitals to develop a Mask R-CNN model aimed at identifying fundus pathologies in medical images, managing the complete AI/ML process, from data preprocessing and augmentation to model training and validation.
- May 2021 - Jul. 2024**
★ Computer Vision & ROS Developer OJO SMART
Built ROS nodes for real-time recognition of colors, objects, signs, banknotes, and text, integrating them into a modular navigation system to assist users with visual impairments.
- Dec. 2019 - Oct. 2023**
Graduate Teaching Assistant Cinvestav, Guadalajara
Supported a course in AI and Computer Vision, assisting master's and PhD students, guiding them in developing neural network models for visual recognition tasks.
- Sep. - Dec. 2022**
Lead Embedded Developer CUValles Tech Dev Club
Led technology projects and developed patent-pending embedded systems focused on automation and sustainability, guiding to student teams on prototyping and sensor integration for automation applications.
- Jul. 2016 - May 2017**
PIC Workshop Advisor University of Guadalajara
Conducted workshops on basic and advanced PIC microcontroller programming in C (XC8), guiding students in circuit prototyping and debugging in both real and simulated environments.
- Aug. - Dec. 2016**
★ C++ · Python · ROS · Technical instruction · Computer vision · Code debugging

Research Contributions

- Jun. 2024**
Meeting Abstract
"Deep-learning based quantification of RPE65-mutation inherited retinal degeneration", presented at *Investigative Ophthalmology & Visual Science*, vol. 65(7), 1392, ID: 2794864
- Sep. 2023**
Journal Article
"Quaternion and Split Quaternion Neural Networks for Low-Light Color Image Enhancement", in *IEEE Access*, vol. 11, 108257-108280, DOI: 10.1109/ACCESS.2023.3312234
- 2017**
Patent
"Device for controlling underactuated two-link systems with one actuator", application no. MX/a/2017/016436, filed under the University of Guadalajara's Invention Support Program.

Academic Degrees

- Sep. 2019 - May 2024**
PhD in Electrical Engineering Cinvestav, Guadalajara
Thesis | Deep learning for recognition and quantification of fundus pathologies using instance segmentation, and quaternion neural networks for low-light image enhancement.
- Sep. 2017 - Aug. 2019**
MSc in Electrical Engineering Cinvestav, Guadalajara
Thesis | Quaternion neural networks for low-light image enhancement, and identification of an electromechanical system.
- Aug. 2012 - Dec. 2016**
BEng in Mechatronics Engineering University of Guadalajara
Social service & Professional Internship | Assistance and development of electronic and mechatronic projects in the electronics and telecommunications laboratory.

Certifications

- AI/ML
- DataClean
- LLMs
- NLP
- OpenCV
- Pandas
- Python
- R
- ROS
- Scikit-learn
- SQL
- TF-Keras
- Full list