

Juan Miguel Chunga Chunga

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Professional Summary

Mechatronics Engineer specializing in Artificial Intelligence, Industrial Automation, Robotics, and CAD/CAM/CAE. Experience in computer vision for industrial environments, Siemens PLC integration, HMIs and OPC UA, and embedded systems development (Raspberry Pi, ESP32). University instructor in innovation and applied engineering technologies.

Professional Experience

Universidad Privada del Norte (UPN)

Teaching Assistant – Engineering

Lima, Peru

2025 – Present

- Taught Engineering Drawing and Design courses (Autodesk Inventor, AutoCAD), aligning content with industrial standards, processes, and requirements.
- Provided academic support in lab sessions, assessments, and technical feedback to students.

Toulouse Lautrec (TLS)

Adjunct Lecturer, Innovation

Lima, Peru

2025 – Present

- Mentored projects in Robotics, 3D Printing, CAD/CAM, Augmented Reality (AR), and Virtual Reality (VR).
- Academic advisor for 30+ bachelor's projects, guiding design, prototyping, and technical documentation.

BeeChips (personal venture)

Founder

Lima, Peru

2024 – Present

- Managed sales of electrical/electronic components and provided customer support.
- Designed and 3D-printed (FDM/SLA) decorative, mechanical, and customized parts.

Tecnocontrol SAC

Project Assistant

Lima, Peru

2024 – 2025

- Developed computer vision algorithms for industrial inspection/monitoring (AI, OpenCV).
- Configured and integrated Siemens PLCs (S7-300/1200/1500), HMIs, and an OPC UA server (TIA Portal, SCADA).
- Designed and implemented an IoT Flutter app for vital-sign monitoring, optimized for Wear OS and intermittent connectivity.
- Designed and prototyped omnidirectional 4WD rovers using Raspberry Pi, ESP32, and Arduino (Python, C/C++).
- Developed embedded Linux solutions for industrial integration, including a custom OS for Toradex Apalis iMX8.
- Built Virtual Reality environments for simulation and technical demonstrations (Unity, Unreal Engine).

Engineering Research Assistant

2022 – 2023

- Programmed and commissioned Siemens PLCs and created/configured an OPC UA server (TIA Portal).
- Prototyped PCBs and supported local manufacturing using a Roland SRM-20 milling machine; CAD/EDA design tools.

- Developed telemetry and sensor acquisition with SBCs (Raspberry Pi, Jetson Nano) and microcontrollers; UART, I2C, and Modbus RTU protocols.

Education

Faculty of Engineering, University of Buenos Aires (FIUBA) <i>Graduate Specialization in Artificial Intelligence</i>	Buenos Aires, Argentina 2025 – Present
Universidad Peruana de Ciencias Aplicadas (UPC) <i>B.Sc. in Mechatronics Engineering</i>	Lima, Peru 2017 – 2022

Certifications and Relevant Training

Selected certifications. Full list available upon request.

- Smart Cities Planning - Complutense University of Madrid and University of Lima (2025)
- PIM Specialization in Digital Prototypes - SEMCOCAD (Autodesk Gold Partner) (2025)
- KUKA ready2_educate Robot Programming (Level 1) - Andes College (2025)
- Computer Numerical Control (CNC) - Andes Technology (2025)
- Robot Programming with ROS (CDE) - CTIC UNI (2022)
- Getting Started with AI on Jetson Nano - NVIDIA (2022)
- Specialization: MATLAB Programming for Engineers and Scientists - Vanderbilt University (2020)

Selected Projects

- **Agricultural 6x6 Rover (Computer Vision):** System for pest detection using image processing and a computer-vision pipeline.
- **ARGO - Autonomous Sairdrone:** SBC programming and telemetry systems development in collaboration with the Peruvian Navy.
- **Pentamaran Vehicle:** Mechanical and hydrodynamic design oriented to oceanographic applications.

Technical Skills

Programming Languages: Python, C++, C, Dart, MATLAB, SQL

AI / Machine Learning: Computer Vision, Neural Networks, TensorFlow, OpenCV

Industrial Automation: Siemens PLC S7-300/1200/1500, TIA Portal, SCADA, OPC UA, HMI

Embedded Systems: Raspberry Pi, ESP32, Arduino, Linux

CAD/CAM/CAE: SolidWorks, Autodesk Inventor, AutoCAD, Fusion 360

Simulation / XR: Unity, Unreal Engine, Augmented Reality (AR), Virtual Reality (VR)

Languages: English (Intermediate)

Leadership and Affiliations

- IEEE Member (6 years).
- Volunteer, IEEE WIE Peru (2025 – Present).
- President, IEEE UPC (2022) and IEEE Brand Administration Committee (2023 – 2024).
- Industry 4.0 Projects Coordinator – IEEE WIE Peru (2023 – 2024).
- First place, national Ethics competition – IEEE (2022).