

ADRIÁN PASCUAL

MECHATRONICS ENGINEERING

Guatemala, Guatemala • 4286-1130 • adrianjosepascual14@gmail.com

<https://adrian-pascual.mec4tx.com>

PROFESSIONAL PROFILE

Final-year Mechatronics Engineering student with hands-on experience in PCB component soldering, computer hardware maintenance, and local network configuration. Experienced in algorithmic control, motion capture, and UAV flight testing in a laboratory environment. Highly technical profile oriented towards problem-solving in maintenance workshops and fieldwork.

PROFESSIONAL EXPERIENCE

Engineering Intern | SmartLiving (Corporación AICSA)

February 2026 - July 2026

- Completed 400 hours of professional internship focused on the diagnosis, wiring, and commissioning of automation infrastructure.
- Resolved technical connectivity issues and hardware integration in the field, performing continuity tests and interpreting electrical schematics.

FEATURED PROJECTS

Autonomous Navigation and Control System for UAVs (Graduation Project)

- Designed and implemented trajectories using Catmull-Rom splines to ensure smooth navigation and obstacle avoidance for a UAV (Crazyflie 2.1).
- Implemented Pure Pursuit and Look-ahead control algorithms for dynamic track following.
- Integrated real-time positioning and feedback using the OptiTrack motion capture (MoCap) system within the Robotat ecosystem.

IT Support, Networking, and Homelab Server

- Configured local networks, IP allocation, and routers; provided remote technical assistance for point-of-sale (POS) systems and MySQL databases.
- Performed hardware maintenance and upgrades on computers, including driver installations in Windows and Linux environments.
- Deployed a local server on Lenovo Tiny hardware, managing Docker containers for storage and network monitoring.

TECHNICAL SKILLS

- Hardware & Workshop: Electronic soldering, PCB diagnostics, multimeter, oscilloscope, microcontrollers (ESP32, Arduino), 3D printing.
- Systems & Networking: PC maintenance (Windows/Linux, SSD/RAM upgrades), local network configuration (TCP/DHCP/IP), Docker.
- Robotics & Software: UAV flight testing, OptiTrack MoCap, Python, MATLAB/Simulink, CAD design.

EDUCATION & LANGUAGES

B.S. in Mechatronics Engineering | Universidad del Valle de Guatemala

- Expected completion: November 2026

Languages: Upper-Intermediate English

- Proficient in reading and interpreting technical manuals and datasheets.