Andres Gumucio

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Education

Texas A&M University College Station, TX
B.S. Computer Engineering August 2024 - May 2028, GPA: 3.24

Relevant Coursework: Digital Systems Design, Object Oriented Programming, Data Structures & Algorithms, Electrical Circuit Theory, Differential Equations, Discrete Mathematics

Projects

Automated Motion Tracking System *C++*

- Developed real-time motion detection system integrating an ultrasonic sensor, stepper motor, and rotary encoder to automatically track and point toward detected motion with under 50ms response time
- Programmed Arduino microcontroller in C++ to manage 12 detection zones across 180° field of view, controlling stepper motor positioning, LCD display interface, and multi-component coordination with ±18° pointing accuracy and 80% detection rate
- Validated system reliability through testing scenarios including false positive rejection, edge case handling, and environmental adaptation, confirming stable autonomous operation without manual intervention

TAMU ThinkTank Solar District Cup *Excel, Aurora Solar*

- Led cross-functional team of 4 engineers to develop comprehensive financial model for 1.2MW solar PV installation across 3 Seattle campuses, projecting $3.3M revenue over 25-year PPA contract term
- Collaborated with engineering and urban planning subteams to deliver optimized system design with aggregate NPV of $504K and average IRR of 14% across campus sites
- Presented comprehensive solar installation proposal to NREL industry panel, successfully defending financial assumptions and methodology under rigorous examination, earning verbal distinction competing against senior and graduate-level teams

Organizations

TAMU Drillbotics College Station, TX
Embedded Systems Engineer December 2025 - Present

- Collaborating in a multidisciplinary team to design and implement low-level firmware for an autonomous drilling rig, focusing on real-time sensor integration and motor control systems, as well as sensor fusion and closed-loop machine learning algorithms

Society of Hispanic Professional Engineers College Station, TX
Member August 2024 - Present

- Actively participate in professional development workshops and industry networking events while leveraging resources and collaborating with peers as part of the largest SHPE chapter in the nation

Experience

UPS Magnolia, Texas
Retail Associate June 2023 - August 2023

- Processed over 500 daily Amazon returns in compliance with shipping regulations while monitoring inventory levels using ORION software tracking systems with 100% accuracy
- Utilized WorldShip software to optimize routing and determine cost-effective shipping solutions, reducing customer delivery times and operational costs

American Pools Houston The Woodlands, Texas
Lifeguard May 2020 - September 2020

- Enforced safety protocols for pool averaging 40+ daily visitors as part of 4-person lifeguard team, operating life-saving equipment including AEDs and rescue tubes with 100% readiness
- Conducted water quality testing and adjusted chemical levels across 18,000-gallon facility to maintain state health compliance while resolving guest conflicts through effective communication

Skills

Programming:	C++, C, Python, Java, Verilog
Hardware:	Oscilloscope, RISC-V, Breadboarding, KiCad (basic)
Areas:	Embdedded Systems, Automation, ASIC
Languages:	English, Spanish, Chinese