Alexander Morales

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EDUCATION

Purdue University, College of Engineering — West Lafayette, IN
Bachelor of Science in Computer Engineering — May 2028
GPA: 3.83 (Dean's List & Semester Honors)

PROFESSIONAL EXPERIENCE

Engineering Intern — Millburn, NJ |
New Jersey Government Department of Engineering Municipality — Jun 2025-Aug 2025

- Automated data logging for county/township roads in Python, reducing manual work accelerating review workflow.
- Created AutoCAD designs for a multimillion-dollar township roads project, performed onsite data collection, and organized data in Excel for engineering analysis, independently completing tasks and presenting findings to supervisors for decision making.
- Conducted research on USDOT PROWAG regulations, identifying cost-saving opportunities that prevented thousands in excess spending on a federally funded project, and produced a report citing the laws and regulations applied.

Full Stack Web Developer and Project Manager — Indianapolis, IN |
Purdue University - Engineering Projects in Community Service (EPICS) — Aug 2024–May 2025

- Implemented an end-to-end full stack application by consolidating ~1,000,000 unstructured student records into a MongoDB data layer and developing a Node.js and Express.js API to support real time student ID lookup, analytics, and course level academic recommendations across nearly 20 years of data.
- Integrated an AI based recommendation system using the Anthropic API, performing student feature extraction and structured response parsing to generate deterministic recommendations.
- Deployed the open-source production application live on Render using HTML, CSS, and JavaScript.
- Managed a team of engineers by creating detailed Gantt charts, organizing project timelines and milestones, supervising budgeting, coordinating with stakeholders, and overseeing formal technical and design presentations

Robotics Controls Systems Engineer — West Lafayette, IN |
Purdue University - Humanoid Robot Club — Aug 2024-Dec 2024

- Developed sinusoidal walking cycles for a small-scale humanoid robot leg model using Arduino, contributing to both coding and planning of standing movements through detailed board designs.
- Documented progress by recording multiple videos to analyze and refine the walking cycle, contributing to code optimization and investigated theoretical models for optimal robot locomotion and algorithm development.

Embedded Systems Engineer — Hoboken, NJ |
Stevens Institute of Technology – Engineering and Science Program — Jun 2023-Aug 2023

- Built and programmed circuits for ignition, horn, turn signals, tachometer, and gear shift using LEDs, resistors, buttons, buzzers, and DC motors for a car simulator.
- Displayed real time simulated RPM and gear data on an LCD interface through sensor and I/O integration.
- Led a five-member team in designing and implementing an embedded automotive simulator using Arduino microcontrollers, breadboarding, and Python libraries to teach new drivers car control fundamentals.

LEADERSHIP AND COMMUNITY ENGAGEMENT

President — Indianapolis, IN |
Purdue University - Electrical and Computer Engineering Student Society — Apr 2025-Present

- Organized large scale outreach campaigns and tabling events that reached hundreds of Purdue students and increased event attendance by 700% (~7 → ~50+) for social and networking events.
- Doubled active membership and restructured the organization for greater efficiency by transitioning internal communication to Slack, created standardized Excel templates for event plans and budgets, and renovated the club's archival system for clearer scheduling and documentation.
- Coordinated weekly executive board meetings, oversaw activities of officers and six committees, managing $10,000 budget, club resources, event planning, and documentation through Microsoft Office and Google Workspace tools.

SKILLS

- Skills: C, Java, Python, HTML, CSS, JavaScript, OpenCV, MATLAB, Git(Source Control), LT Spice, Pulse-width modulation (PWM) generation, 555 timer IC circuit design (monostable, astable modes), AutoCAD, Fusion 360 CAD, Soldering, MS Office (Excel, PowerPoint, Word, Teams), Google Workspace (Sheets, Docs, Slides, Drive), Spanish