Ivanna Aleman-Coronado

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EDUCATION

The University of Texas at Austin – *Austin, TX* **Expected May 2028**
B.S. Computer Science, Minor in Robotics

- Relevant Coursework: Data Structures, Discrete Math for Computer Science, Calculus II & III, Computer Architecture, Robotics.
- Robotics Honors Program, Freshman Research Initiative Participant

Carroll High School – *Southlake, TX* **Graduated May 2025**

TECHNICAL SKILLS

Languages: Java, Python, C, Javascript, Swift, HTML/CSS

Technologies: Linux, Version Control (Git), VS Code PyCharm, JFrame/JPanel, FoxGlove, ROS navigation stack.

Development: Website Development, Java programs, Machine Learning Models, Robot Operating Systems.

PROFESSIONAL EXPERIENCE

Undergraduate Student Researcher, University of Texas at Austin (UT CS Autonomous Driving Lab) **Jan 2026 - Present**
Austin, Texas

- Participating in hands-on research on autonomous systems, including perception, planning, and control for scaled autonomous vehicles.
- Implementing multi-sensor fusion using camera, LiDAR, and IMU data to detect and track car environments in real time.
- Developing algorithms for long-term localization, mapping, and decision-making in dynamic scaled race track environments with plans to move to a dynamic multi-agent space.

Machine Learning Research Intern, University of Texas at Dallas (StraRLiNG Lab) **May 2024 - August 2024**
Dallas, Texas

- Developed anomaly-based machine learning models using K-means Clustering, Gaussian Mixture Models, and One-Class classifiers to develop solutions for real-world Denial-of-service attacks.
- Conducted comparative analysis of signature-based versus anomaly-based detection methods on network traffic data, evaluating performance across accuracy, recall, and precision metrics.
- Collaborated with a research team to build a detection system that outperformed traditional signature-based approaches for identifying novel attack patterns.
- Presented findings on machine learning-based network security to UTD faculty.

PROJECTS

Block-Based Programming Game (Squirrel++) | Java, Java Swing | GIMP 3 (level Design)

Developed an interactive education game featuring a drag-and-drop visual programming interface that allows players to construct logic driven programs to control the custom drawn character Otis the Squirrel in a 2D environment. Engineered a custom command system with modular components inducing movement commands, conditional logic (IF/ELSE statements), and game-state conditions executed through a runtime program panel. Designed a custom UI using Java Swig with layered panels, custom rendering, and dynamically editable conditional blocks that update behavior in real-time. Implemented Collision detection, state-based player movement, and level data evaluation to enable responsive gameplay and realtime decision making.

- ➔ Demonstrated proficiency in object oriented design, event-driven programming, and created a prototype for an educational tool that will continue to be developed for use in elementary coding classes.

Personal Portfolio Website | JavaScript, HTML, CSS | Figma (UI Design)

Developed a responsive personal portfolio website from scratch to showcase professional experience, technical projects, and skills. Implemented interactive UI components and dynamic content rendering using JavaScript. Utilized CSS adaptive layouts to ensure cross-browser adaptability. Won First Place in the Hispanic Association of Computer Scientists Website Competition, Selected from submissions by UT Austin CS Students.

- ➔ Demonstrated full stack web-development from front end design in Figma to development in VSCode.

AWARDS AND RECOGNITIONS

- **HACS Personal Website Competition winner:** Awarded first place for designing and developing a personal portfolio website, demonstrating technical proficiency and web design.
- **Hispanic Scholarship Fund Scholar:** Selected from 70,000 applications for academic achievement and leadership.
- **NCWIT Aspirations in Computing High School Regional Affiliate:** Recognized for aptitude in computing, leadership experience, and demonstrated commitment to the field.
- **National Hispanic Recognition Award:** Honored by the College Board for outstanding achievement among Latino and Hispanic high school students.