Yanai Avila

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EDUCATION

University of Las Vegas, Nevada — Las Vegas, NV
Bachelor of Science in Computer Engineering — Sept 2020 – Dec 2024
Current GPA: 3.59 (Dean's Honor List Spring/Fall 2024, Fall 2023, Spring 2022, Fall 2020)

Mobile Robotics: Autonomous mobile robot design, implementation, and programming covering control theory, kinematics, dynamics, sensors, actuators and vision; Fundamentals of ROS-based development and simulation.
Embedded System Design: Microcontroller architecture, instructions set, applications, and sensor/actuator interfacing; Covers timers, interrupts, motors, USART and SPI; Programming with both C# and AVR Assembly.
Digital System Architecture and Design: Design of datapaths and control units for RISC microprocessors using HDL tools and design platforms. Timing analysis, simulation, and testing of synchronous digital systems.
Electronics I: Circuit design and analysis with diodes and transistors and semiconductor fundamentals.

TECHNOLOGY SKILLS

Software/Tools: Altium, KiCad, Quartus, LTspice, VCS, Unity Game Engine, Microchip Studio, ROS, ModelSim, MediaPipe, Multisim, Adobe Photoshop, Microsoft Office, Ubuntu, WordPress, SolidWorks, Git
Languages: C, C++, C#, Python, VHDL, Verilog, SystemVerilog, AVR Assembly, RISC-V Assembly, Bash, HTML, CSS
Hardware: Soldering, PCB design/layout, microcontrollers, Altera FPGAs, test fixture development, circuit design

PROJECTS

Interactive Hologram: Developed a hand gesture-controlled holographic interface using MediaPipe for real-time hand tracking and Python APIs for computer control, enabling users to manipulate 3D objects, navigate web browsers, and perform actions like moving their cursor, clicking, scrolling, and typing — entirely hands free.
2-player Competitive Mini-Game: Implemented a mini-game that resembles the arcade game Cyclone on an embedded systems design lab board. This game was implemented using C and used timers, interrupts, and USART.
Random Match Game: Designed and implemented a game using SystemVerilog in which a player tries to guess a sequence of numbers that will be randomly generated. This game was designed to be played on an Altera DE2 Board.

WORK EXPERIENCE

JUNIOR ELECTRONICS TECHNICIAN — Las Vegas, NV
Pololu Robotics and Electronics — June 2024 – Present
- Wire test fixtures for newly developed electrical boards, including current sensors, motor drivers, voltage regulators, reverse voltage protectors, ideal diodes, I2C isolators, gaining proficiency in soldering and schematic interpretation.
- Designed and developed PCBs, including a negative pull-down tester board for fault pin testing, a quad op-amp breakout board configurable in any mode, and a LM74x00-based reverse voltage protection and ideal diode board.
- Led the full PCB development process, including component layout, routing, panelization, generating Gerber files, designing the test fixture (schematic, wiring, code), and validating the board's functionality.
- Characterized electrical boards by measuring continuous and instantaneous current, frequency, and efficiency.

PROGRAM MANAGER — Las Vegas, NV
***Student Interactions with STEM (SISTEM)* sponsored by Nevada National Security Sites** — Sept 2021 – Dec 2024
- Handle program logistics such as recruiting STEM speakers and high school participants, ordering food, handling evaluation surveys, creating schedules and icebreakers, providing important information to participants via email and Discord, and managing a small team of undergraduate students who assist during events.

UNDERGRADUATE MENTOR — Las Vegas, NV
***Las Vegas STEM Lab Summer Camp* sponsored by the National Science Foundation** — Apr 2023 – May 2024
- Mentored and assisted a team of 4 middle school students in developing a project for entertainment and hospitality applications using microcontrollers, sensors, motors, LEDs, Tinkercad, Arduino, and object-oriented C/C++.

ENGINEERING TUTOR — Las Vegas, NV
UNLV Academic Success Center Tutoring Labs — Nov 2023 – May 2024
- Foster a productive learning environment by using collaborative learning strategies and questioning skills to engage over 5 students weekly in Computer Engineering, Computer Science, Electrical Engineering, and Physics concepts.

GAME DEVELOPER — Las Vegas, NV
UNLV Center for Gaming Innovation — May 2022 – May 2023
- Developed 2 demos for casino table games in C using the Unity game engine to showcase to casino game companies in Las Vegas interested in purchasing the game concepts, inventions, and other intellectual property.