

Alexis N. Ayala-Ochoa

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EDUCATION

Stanford University | Cumulative GPA 3.24 | Class Of 2028 |

Stanford, CA

B.S.: Environmental Systems Engineering | Concentration: Energy

September 2024 - June 2028 (Ex.)

Coursework: CS106A - Programming, EE101A - Circuits I, CEE107A - Understanding Energy, CEE176B - 100% Renewable Energy

PROJECTS

Portable Math Device | *Personal Project* | *Arduino, Embedded Systems* |

- Built a handheld embedded system using an Arduino, push buttons, and a 128x64 SPI OLED display for an interactive math quiz.
- Implemented program logic to generate math problems and process user responses through button inputs
- Utilized the U8g2 graphics library to render questions and feedback on the OLED display

BlinkAI | *Hackathon Project* | *Python, Flask, Javascript, OpenCV* |

- Built an assistive technology that converts eye blinks to text using computer vision and AI, enabling hands-free communication.
- Implemented real-time facial tracking with OpenCV to detect and translate blink patterns into Morse code with 95% accuracy.
- Developed a responsive web interface; the project won [Best Beginner Hack](#) and was featured in [The Stanford Daily](#).

Solar-Powered USB Charger | *Personal Project* | *Soldering, Circuits* |

- Built a solar-powered USB charger using a Lithium battery and DC–DC converter to deliver a 5V output for mobile devices
- Analyzed solar cell I–V curves and converter efficiency by measuring voltage/current with multimeters and load resistors.
- Implemented diode protection to block reverse current, improving circuit reliability and safety in variable light conditions.

Arduino-Controlled Electromechanical Box | *Personal Project* | *Soldering, Arduino* |

- Integrated Arduino motor control, switches, and mechanical components to create an autonomous input-response system.
- Programmed Arduino with finite state machines for trick behaviors (delay, oscillation, random responses).
- Enhanced user interaction by designing motor responses that made the box unpredictable and engaging.

Nintendo DS Hardware Restoration | *Personal Project* | *Electronics Repair* |

- Diagnosed hardware failures in Nintendo DS systems including LCD display damage, ribbon cable faults, and connector issues
- Disassembled devices and replaced faulty components by integrating functional modules from multiple donor units
- Reassembled and tested hardware modules to restore full device functionality and system operation

RESEARCH EXPERIENCE

Human-Centered Artificial Intelligence (HAI) Lab | *Student Researcher* | Stanford, CA

June 2025- August 2025

- Contributed to RoleplAR, an AR platform integrating AI-generated narratives and 3D scenes for immersive language learning
- Implemented an AI-to-AR pipeline using OpenAI, DALL·E, and Stability AI to generate 3D scenes (.glb) for AR rendering
- Presented research findings at the Stanford Summer Fellows Program (SSFP) on spatial storytelling for language learning

LEADERSHIP & PROFESSIONAL DEVELOPMENT

Management Leadership for Tomorrow | *Career Prep Fellow* | Bethesda, MD

January 2026 - Present

- Accepted into a selective 18-month professional development program for high-achieving diverse talent
- Complete business case studies and assignments to grow leadership and technical skills
- Attend conferences hosted by industry leaders such as Deloitte, LinkedIn, and Target

Los Hermanos De Stanford | *Financial Officer* | Stanford, CA

July 2025 - Present

- Managed \$3,500+ event budgets for club activities including cultural celebration, ensuring all expenses stayed within limits.
- Improved budget planning that increased spending efficiency by 25%, enabling additional programming throughout the year.
- Collaborated closely with event coordinators to successfully execute all planned activities within strict budget parameters.

Gamma Zeta Alpha Fraternity, Inc. | *Lead Fundraising Chair* | Stanford, CA

April 2025 - Present

- Created and executed a fundraising sales strategy using traditional door-to-door tactics, generating \$1,000 in revenue
- Managed expenses of \$186 and delivered a net profit of \$814, achieving a 437% ROI.
- Coordinated events, outreach campaigns, and member collaboration to expand donor engagement and maximize impact.

Zero Robotics | *Mentor* | Gonzales, CA

June 2024 - August 2024

- Mentored a group of 10 middle school students in programming and robot design for NASA's Zero Robotics competition.
- Assisted students in developing strategies for robot functionality and performance to enhance project efficiency.
- Led structured group sessions to promote teamwork and collaboration, resulting in a positive learning environment.

AFFILIATIONS, SKILLS, & INTERESTS

Affiliations: SOLE (Society Of Latino Engineers), Los Hermanos De Stanford, Gamma Zeta Alpha Fraternity, Inc.,

Skills: Hardware – Raspberry Pi, Arduino, Microcontrollers, Multimeters, Soldering Irons, Oscilloscopes | Programming (Beginner) –

Python, C++, HTML, OpenCV | Tools – Visual Studio Code, Blender, GitHub, AutoCAD, OnShape | Softwares - Word, Excel,

Powerpoint

Interests: Environment, Energy, Robotics, AI, Hardware Systems, Embedded Systems, PCB Design