

Muhammad Adil Iftikhar

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EDUCATION

CALIFORNIA POLYTECHNIC STATE UNIVERSITY, SAN LUIS OBISPO (Cal Poly SLO)

June 2027

Bachelor of Science, Electrical Engineering

GPA: 3.5

Dean List Recipient: Fall 2023, Spring 2024, Summer 2024

Relevant Completed Coursework:

- Electrical Circuit Analysis 1, Fundamentals of Computer Science, Introduction to Electrical Engineering, Digital Design, Electrical Circuit Analysis 2

TECHNICAL PROJECTS

Lebron James' Legacy (RGM)

December 2024

- Engineered a Rube Goldberg Machine featuring capacitive-touch piano, strobe light, light detection, and metal detector circuits to demonstrate complex system integration.
- Gained hands-on experience with RC and RLC circuit design and troubleshooting, deepening understanding of timing, resonance, and frequency response.
- Integrated Arduino programming to synchronize circuit responses and automate the machine's operation, culminating in a functional demonstration of engineering creativity.

4-bit Digital-to-Analog Converter (DAC)

May 2024

- Designed a cost-effective 4-bit DAC using seven resistors and two op-amps, simulated in LTSpice, and developed a PCB layout in EAGLE.
- Prototyped and tested the DAC with an Arduino-driven 74163-counter, demonstrating a functional digital-to-analog conversion system.
- Utilized Eagle's Design and Electrical Rule Checks to troubleshoot and refine PCB designs, gaining hands-on PCB development experience.

Cognitive Memory Enhancement System

December 2023

- Designed and programmed a memory-based game using Arduino, with 6 progressive levels to test user's memory retention.
- Integrated PIR motion sensors, LCD displays, and LED lights to create an interactive experience with real-time feedback.
- Programmed hardware interrupts and used C++ to optimize game performance, achieved a 200ms response time and 100% input accuracy.

SKILLS

- Circuit experience, Circuit Analysis, Soldering, Oscilloscope and Multimeter Proficiency, Fusion 360, HTML, C++, JavaScript, Java, Arduino Programming, Open Communication, Critical Thinking and Problem-Solving.

PROFESSIONAL EXPERIENCE

Undergraduate Research Assistant | College of Engineering | San Luis Obispo, CA

April 2024- Present

PI: Dr. Eric Espinosa-Wade

Research topic: Application of Large Language Models to improve communication in Human-Robot Dyads

- Applied psychological theories in SAR studies, selecting participants with similar impairments to ensure consistency in therapeutic interactions.
- Led studies on robot interactions, improving GPT-4 response accuracy and evaluating user experiences with hand-crafted versus AI-driven responses.
- Enhanced robot system design and optimized speech therapy tasks for human participants.

ACTIVITIES AND SOCIETIES

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

- Networked with peers and industry professionals, leveraging resources for academic and professional development.

Muslim Student Association

- Facilitated discussions to deepen connections with fellow Muslim students, shared religious knowledge, and educated non-Muslims to foster understanding and inclusivity.