

Aaron Allar

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Education

Cal Poly Pomona – Pomona, CA, 2014 to 2017

- B.S. Electronics Systems Engineering Technology

Work Experience

Instructional Student Assistant 2016 - 2017

Role: Assist Electromechanical Engineering Technology Department in assisted teaching a lab course, grading students work. Location : California State Polytechnic University, Pomona

IT Student Assistant 2014 - 2017

Role: Provide technical support, maintenance including cleaning, updating, and taking preemptive measures and installation of technology such as lecterns, projects, extron systems to ensure users have a easy and enjoyable experience. Location : California State Polytechnic University, Pomona

Webmaster 2017 - 2017

Role: Updating the MENTORES website and providing technical support to the MENTORES team as well as submitting monthly progress reports.

Projects

SEAD - System for Environmental Acquisition Data

- Project lead, system designer, embedded designer, and coder. A all-in-one system for Environmental Data Acquisition (EDA). Implementing STM32 controller, Xbee SX RF Digi Mesh networking, RS-485, Including Sensors: Color, UV, Pressure, Temperature, Humidity, GPS. A Web interface GUI.

Haptic Systems

- Build and implement a telerobotic system using the Falcon haptic device as a master and building a 3-degree of freedom "slave" manipulator.

AA Battery USB Charger

- Designed and assembled a PCB board for a USB charging circuit running on two AA batteries, with EAGLE software.

Miniature Solar tracker

- Currently designing and building a miniature solar tracker using a PLC and microcontroller, which tracks the sun's movements and rotates the solar panel accordingly.

Stewart platform

- Designed the mechanical system in SolidWorks and wire diagram of a type of parallel robot that has six actuators attached in pairs to three positions on the platform's baseplate, crossing over to three mounting points on a top plate. Devices placed on the top plate can be moved in the six degrees of freedom.

Skills

- Experienced in Rapid prototyping using 3D printer(FDM) technology
- Proficient interpersonal communication skills
- Ability to technically troubleshoot desktop and laptop systems rapidly and accurately to resolve challenging technical issues.
- Quickly learn and master new technology; work well within in a team environment and independently.

Hardware

- PIC, STM32, and AVR microcontrollers, PLCs, Oscilloscopes, Spectrum Analyzers, Extron control systems, Various Power Tools, Soldering Iron, Multimeters, Basic FPGA(Xilinx).

Software

- EAGLE CAD, SolidWorks, MATLAB/Simulink, PSpice variations, LabVIEW, Microsoft Office
Programming languages: AVR, Assembly, C++, C, GML, HTML, Basics of VERILOG

My interest in Engineering was born as a result of my creative ability coupled with my fascination for the mechanism behind everything. Unlike most people who admire the end product, I will always enquire as to how it was made. The field of Engineering directly correlates with this fascination and as a result of my experience, my interest has evolved into electrical and electronic engineering. I find it to be a fast-paced discipline with constant improvements being made. I like the way in which it allows me to make the world a more developed place and allows me to utilise my practical skills in doing so.

With related yet diverse work experience while simultaneously studying for my degree in Electronics systems Engineering technology, I have already achieved a strong foundation of knowledge and expertise. Working to Assist the Electromechanical Engineering Technology Department in teaching a lab course, I was able to grade students work and discovered what it takes to be an academic success. As an IT assistant, I provided technical support which solidified my practical experience. I regularly oversaw maintenance including cleaning, updating, and taking preemptive measures with the installation of technology such as lecterns, projects, extron systems to ensure users have a easy and enjoyable experience. I found this insightful and I gained the ability to problem solve quickly and efficiently.

I have been part of many projects which demonstrate my ability to develop and execute. I have worked as a Project lead, system designer, embedded designer, and coder of a all-in-one system for Environmental Data Acquisition. In addition, I have designed and assembled a PCB board for a USB charging circuit running on two AA batteries by the use of EAGLE software. Another notable project was for GRID Alternative Spring Break (Residential Solar PV) where I worked as part of a team to install two residential photovoltaic solar electric systems. This involved assembling and attached roof rail mounting system for solar panels. I achieved hands on experience while also having to oversee a project from beginning to end. I was able to demonstrate my reliability as well as natural born ability for this specialty and it served to motivate me further to become successful in Electrical Engineering.

In regards to my character, I am loyal, down to earth and self-motivated as well as having passion for this industry. Studying robotics recently has really confirmed that I am on the right track as I genuinely can see how groundbreaking this is and I know that I can have a significant impact in the world of electronic engineering.

I am extremely fascinated by all aspects of this discipline and with the fundamentals already achieved, I wish to gain a more in depth expertise. Even in my spare time, I am constantly working with electronics and developing gadgets. I am enthralled by the use of logical and scientific knowledge to solve real life and practical problems. The need to consider political, environmental and economic issues is also something which I find intriguing. There is a need to fulfil requirements, making it less straightforward and more of a challenge. As an individual who enjoys a challenge and has the required creativity, skills and experience to overcome them, I find this field suited to my character and wish to excel in the field of Electrical and Electronics Engineering. This is why I am aiming to hone and develop my skills to reach the highest possible level and I know that I will give back to your institution and program by inventing new products and achieving new designs to make things more efficient.