Jesse A. Wigfield

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Education

California Sate Polytechnic University, Pomona, CA. Graduating December 10, 2016
B.S. in Electrical Engineering (Core GPA: 3.94/4.0) (Overall GPA: 3.55/4.0)

Technical Skills

Programming: C++, MATLAB, Python, Verilog, VHDL, P Spice, SQL, SVN, Git
Operating Systems: Windows, Linux, Mac OSX
Hardware: Microcontrollers, Spartan 3 FPGA, Oscilloscope, Soldiering, Electric Drive Systems

Professional Experience

NASA JPL, Pasadena, CA. US. June 2016 – Present
Simulation and Support Equipment Division
- Developing electronic ground support equipment to test motors for Mars-2020 and InSight
- Researched and developed algorithms to Auto-Code spacecraft simulations from SysML models
- Soldiered and assembled custom electronic support equipment

Campfire Alaska, Anchorage, AK. US. Summer 2015
Recreation Senior Staff
- Led a team of three youth counselors to remote Alaskan communities
- Taught the children swimming skills, cold water safety, and life skills

China Lake Child and Youth Programs, Ridgecrest, CA. US. May 2009 - September 2014
Lead Staff
- Directed a staff of 10-20 counselors in youth development programs
- Created three new youth clubs: Rock Wall Club, Paintball Club, and Fix-It Club

Projects

Spacecraft Simulation Auto-Coding - NASA
Researched and developed algorithms to:
- Query SysML spacecraft models for components
- Match components with an SQL database of standardized components
- Auto-code simulation initialization with matched components

Micromouse Autonomous Maze Solving Robot - IEEE
- Designed and tuned a PID control algorithm using C++ and an Atmel microcontroller
- Provided precise control of two synchronized DC motors
- Taught microcontroller programming to new members of IEEE

RF Range Finding - Senior Project
- Implemented Silicone Instruments RF transmitters and receivers via PIC microcontrollers
- Utilized matching circuitry, oscilloscope FFT, and band pass filters
- Accurately measured the time of signal travel using a Texas Instruments time to digital converter

VHDL Trigonometric Calculator Implemented - Spartan 3 FPGA
- Designed a sine and cosine calculator using the CORDIC algorithm
- Accomplished multiplication and division with structural arrays of adders

Team Research and Development Project - Traditional AI Methods
- Used MATLAB to study the effectiveness and utilization of the A* graph traversal algorithm
- Completed an algorithm that could solve mazes and illustrate the fastest possible solution

Personal Achievements

Eagle Scout
- Orchestrated troop meetings, camp-outs, hikes, and community service events