MARK MIW

Los Angeles, CA
(808) 748 - 1862
markmiw4@gmail.com

SENIOR DIGITAL CIRCUIT DESIGN ENGINEER

EXPERIENCE

Raytheon
Senior Electrical Engineer I (Oct 2019 - Present)
- Performed signal integrity analysis for high speed digital interfaces reaching up to 25gbps per lane.
- Created test development plans for new board bring up on high speed interfaces and overall functionality.
- Tested and characterized high-speed digital boards using oscilloscopes, spectrum analyzers, and logic analyzers.

Northrop Grumman
Circuit Design Engineer II (Digital Products) (May 2018 - Oct 2019)
- Provided technical oversight and review over schematic capture, PCB layout, and architecture for boards up to 42 layers.
- Designed, integrated, and analyzed high speed digital FPGA interfaces along with other RF components.
- Prototyped, built, and tested circuits for breadboard performance testing using a variety of lab tools.
- Analyzed worst-case timing and signal integrity for SERDES, DDR3/4, SPI, LVDS, CMOS, TTL interfaces using Hyperlynx SI.
- Performed IR drop and current density analysis on power planes and pins using Hyperlynx PI and power supply stability and ripple rejection on SPICE.

Hawaiian Electric Company
Designer II (Renewable Energy Engineer) (May 2016 – May 2018)
- Modeled, analyzed, and verified over $300,000,000 of renewable generation with Matlab saving up to $30,000,000 a year.
- Implemented and tested smart meter collar technology which increased renewable energy generation by 10% on the island of Molokai. Expected to reach 100% renewable generation by 2020.
- Supported the creation of a renewable Power Purchase Agreement. Required the derivation of new solar and wind plant metrics based off of big data analytics for Hawaii's highly variable and penetrated grid.
- Analyzed data and created scripts to support/automate transmission and distribution modeling efforts and event analysis.

Hawaiian Electric Company
Designer (Power Plant Engineer) (August 2015 – May 2016)
- Prepared drawings, calculations, and specifications in accordance with applicable NEC codes and regulations.
- Managed major capital projects to improve and maintain plant operations.
- Prepared material and construction equipment specifications for bid and proposal evaluation.

Hawaii Center for Advanced Communications
Radio Frequency Engineer Research Assistant (November 2014 – July 2015)
- Proposed, designed, and fabricated an alternative automatic tracking antenna.
- Designed and simulated innovative digital and microwave circuits on CADEagle, ADS, and HFSS.
- Supported Radio Frequency Engineers with network analyzer/spectrum analyzer testing, PCB design, and fabrication.

CORE SKILLS

Proficient in: Matlab, Hyperlynx SI/PI, ADS, HFSS, SPICE, Mentor Graphics Designer, CAD Eagle, SketchUp
Knowledge of: C/C++, Linux, LogicWorks, GIS, PIC, Visio, and Solidworks

PROJECTS

Micromouse:
- Created an autonomous robot that finds the center of a 16x16 cell maze within five seconds.
- Designed the schematics, layouts, and 3D models for an autonomous robot on CAD Eagle and SketchUp.
- Implemented a PID control feedback loop in C.

Real-Time Analog Retrodirective Antenna
- Designed and simulated a non-moving, analog, automatic tracking antenna on ADS and HFSS.
- Fabricated with a CNC milling machine and tested utilizing a spectrum analyzer.

ACHIEVEMENTS

- 1st Place at the IEEE Region 6 Micromouse and PCB Design 2015

EDUCATION

University of Hawaii at Manoa, B.S. Electrical Engineering (August 2011 – May 2015)