Tin Thurein

Electrical Engineer · Hardware Enthusiast · EIT: 166315

San Francisco, CA

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Summary

Highly motivated electrical engineer who possesses Electrical, Mechanical and Communication engineering knowledge with hands-on experience, with a focus on finding solutions to energy, transportation, and sustainability.

Education

UC Santa Cruz — *Santa Cruz, CA*

B.S. in Electrical Engineering — *June 2017*

- **Concentration:** Electronics/ Opto-electronics
- **Major GPA:** 3.50/4.00
- **Project Area**: Signal processing and interfacing, IoT, SCADA, ZigBee Mesh network, 3G Communication

City College of San Francisco — *San Francisco, CA*

Associate of Science & Engineering — *May 2015*

- Dean's Honor List

Relevant Coursework

- Computer Networks
- Signals and Systems
- Optical Electronics/Photonics
- Digital Signal Processing
- Micro System Design
- Logic Design
- Analog Electronics

Skills

Programming

C, MIPS Assembly, Verilog, PLC, HMI

Engineering

Mechanical design and assembly, FPGA, Logic Design, DSP, Optical Communication, Analog & Digital Communication, PCB, Circuit Simulation, Material Properties

Software

Microsoft Office Suite: Access, Excel, Outlook, PowerPoint, Project, Word, SolidWorks, Autodesk Inventor, MATLAB, Allegro PCB Design, Cadence Suite, PSPICE, EAGLE CAD, National Instrument Circuit Suite, Xilinx, PSoC IDE, WireShark

Lab Equipment

Spectrum Analyzer, Signal Generator, Signal Analyzer, Oscilloscope, Multimeter, High power RF generator and matching network, Thin Film Mapping Tool

Machining Tools

Milling, Drill Press, Lathe, Band Saw, Soldering Iron, 3D Printing

Employment

Nordson March — *Concord, CA*

Engineering Technician — *October 2017 - PRESENT*

- Provide technical assistance to introduce new product line of advanced plasma cleaning systems to the market.
- Assist engineers with mechanical system designs, chemical process testing and data analysis to characterize system performance, along with software and system endurance testing.
- Apply engineering knowledge to assist with engineering reports, studies, and calculations, electrical equipment installation,and failure investigation.
- Perform EFEM (Equipment Front End Module) system integration with plasma modules, FAT (Factory Acceptance Test), train customers as well as performing QA and QC procedures on product shipments.
- Improve process cycle time for customers by developing process recipe, optimizing RF power delivery systems, and RF matching networks for the highest plasma treatment, uniformity, and throughput.

Projects

Automated Water Monitoring System with Secure Control

(1st Place Pitch at Santa Cruz IDEA Hub 2017)

- An IoT Supervisory Control and Data Acquisition (SCADA) system with the capability of continuous monitoring reservoirs with secure remote access to control the pumps.
- Responsible for implementing control algorithms, 3G and ZigBee communication links, and preparing electrical system specification.
- Created engineering schematics, electronic sensor interfacing modules, and system diagrams.
- Responsible for designing 3D models using CAD, fabrication and assembly of electronics housing.

Adjustable Power Supply

- A switch mode, variable power supply with output voltage from 0 to 20 Volts, and adjustable current.
- Responsible for schematics capture, circuit simulation, prototyping and testing of the final printed circuit board and fabrication of the electronic enclosure.
- Conducted power efficiency test with varying load and verified the reliability of the power supply.

Ball Catching game on FPGA

- Implemented in *Spartan 3E* FPGA development board with display output via VGA port to a monitor, and keyboard arrow keys as an input.
- Game logic is driven by Finite State machine and programmed using Verilog Hardware Description Language (VHDL).

Network Router with Firewall

- Implemented a custom network topology with firewall in *Mininet*, only allowing network traffic with ICMP packets while blocking untrusted hosts.

Signal Processing in MATLAB

- Designed frequency Domain Adaptive Filter in MATLAB for echo cancellation of real and synthetic signals.

Reversi: wifi-connected two-player game

- Designed a two-player wifi connected game with the ability to play against a computer on 16x32 RGB display matrix.

AM/FM Radio Receiver

- Responsible for designing a superheterodyne FM receiver with pre-selector, 2-stage mixer and demodulator using Phased Lock Loop.
- Designed AM receiver with envelope detector and audio amplifier.

Audio Amplifier

- Designed an audio amplifier with 20-20KHz Range, low SNR, adjustable volume and gain.