Travis Ray

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ACCOMPLISHMENT HIGHLIGHTS

- Lead designer that has brought 6 radiation instrumentation products to market.
  - Design role begins at customer specifications, through design, manufacturing, then end user service.
  - Ranging from low power MCUs in battery operated devices to wall plug in devices utilizing SBCs.
  - Products must meet a variety of NRC/ANSI/UL/IEEE and other standards.
- Major circuit design and firmware involvement in another 10 hardware products.
  - Took ownership of existing products to add new features and bug fixes.
- UI/UX design and hardware APIs for software packages and mobile apps.
  - Collaboration with application programmer for requirements and hardware interface.
  - Heavy control of interface.
- Automated batch testing system for validating device for US Navy contract.
  - Reduced testing time at least 4x which allowed product to meet contract deadlines.
  - Identified several flaws that would have been missed with manual testing.
  - Data collected every 2 seconds, tests could last for weeks with up to 30 devices running simultaneously pushing data to SQL database. Control interface in Node-RED with python back-end. Post processing tools in JupyterHub primarily using pandas and matplotlib.
- IoT monitoring/alerting for production and facility processes.
  - One process in particular eliminated issue that caused scrapping entire batches of product. Several people get notified if process is running out of spec so they can intervene outside of business hours.
  - Another function upgraded logging from ancient chart recorders to influxDB + Grafana web interface and added logging to several other processes.
  - Backbone of monitoring system used MQTT.

EXPERIENCE

Leadership

- Managed multidisciplinary teams through multiple projects
- Lead F.I.R.S.T. robotics team to F.R.C. World Championship
- Woodie Flowers Award Finalist
- Freelance projects while in college

Technical

- Mechanical and UI/UX Product Design
- Embedded Firmware (C/C++)
- Circuit/Layout/PCB/PCBA Design and Manufacture (Altium)
- Microcontrollers/DSP (ADC/DAC/I2C/SPI/DMA/etc.)
- Analog circuit design with emphasis on low power
- Debugging (Software, Firmware, and Hardware)
- Git/SVN/Redmine/GitLab
- Automated Testing
- Data processing (Python/Pandas, SQL)
- IoT (ZigBee/XBee/WiFi/ZWave/BLE)
- 3D Modeling (Autodesk Inventor)
- Robotics/Mechatronics (Mechanical Design and Controls)
- LabVIEW
- Networking
- Linux
- LaTeX
- Documentation/Manuals/Procedures

Outreach

- Mentoring younger engineers
- Mentored several outreach programs including: F.I.R.S.T. and B.E.S.T.
- Volunteer at local auditorium

Other Skills/Interests/Hobbies

- Photography
- Woodworking
- Auto mechanics
- Home Automation
- Camping/Hiking
- Motorcycles

Work History

Ludlum Measurements, Inc. 2013 – Present

Project Engineer *Sweetwater, TX*

- Design radiation detection electronics.
- Focused on circuit and firmware but also heavily involved in mechanical design and overall product direction.
- Wearer of many hats.
- Product verification and validation including Environmental/Shock/RF/EMI testing.
- C/C++/Python/Git/SVN/Schematic/Layout/PCB/PCBA

Adjunct Instructor 2011 – 2012

Vista College *Lubbock, TX*

- Taught networking and math classes.

Graduate Research 2009 – 2012

Texas Tech University *Lubbock, TX*

- Managed robotics lab.
- Managed/mentored F.I.R.S.T. robotics team and acted as technical lead.
- Developed Sumo Bot style robot for teaching S.T.E.A.M. classes to junior high through high school students.

Plasma and Pulsed Power Center 2008 – 2009

Texas Tech University *Lubbock, TX*

- High power lighting for 4 million FPS camera.

Education

Texas Tech University Lubbock, TX

Bachelor of Science in Electrical Engineering *Aug. 2002 – May 2008*

- Math Minor

Continuing Education Various

IEEE and other Industry Conferences *2014 - Present*