

(520) 329-2173

SCOTT E. OTTERBACHER

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SUMMARY

Embedded systems designer and strategic leader with broad electrical engineering experience in consumer electronics, medical devices, and civil space. Demonstrated expertise in product design and development of high-reliability systems. Talent for leading teams through design and iteration of complex systems while meeting requirements in schedule and resource constrained environments.

PROFESSIONAL EXPERIENCE

Otek Engineering LLC – www.otekengineer.com

Owner / Principal Engineer

Tucson, AZ
August 2017 – Present

- Embedded systems design and product development consulting
- PCB design and firmware development

University of Arizona – Lunar & Planetary Laboratory

Project Engineer / Electrical Engineer

Tucson, AZ
June 2019 – June 2021

- Leadership of engineering team developing seismometer for spaceflight applications
- Systems engineering, flow of high-level science requirements to instrument design architecture
- Electronics design and embedded software development
- Execution and reporting of NASA technology development programs
- Participation in development and review of proposals for future projects

Garmin International

Sr. Design Engineer / Project Engineer

Tucson, AZ
January 2017 – May 2019

- Leadership of engineering team developing consumer dog products using a structured design process
- Conception and implementation of manufacturing plans in collaboration with Taiwanese facility to build prototypes and transition to mass production minimizing assembly effort and material scrap
- Architect of electrical designs for battery powered devices with multiple radios, including electrical bring-up of initial prototypes and iteration of the design culminating in a mass-production-ready solution
- Software Engineer for first seven months of employment
 - Low-level C development on ARM microcontrollers using a proprietary RTOS
 - Multiple-device distributed systems linked wirelessly
 - PC software development in support of product development (C#, Python, MATLAB)

Marcus Engineering LLC

Sr. Electrical Engineer

Tucson, AZ
April 2013 – December 2016

- Analog/digital circuit design and layout of multi-layer PCBs
- Embedded firmware development in C and assembly for multiple 8/16/32-bit architectures
- Implementation of embedded wireless systems including BLE, GSM, WiFi, and mesh networks
- Application development in Android (Java/C), C#, Python, Java, and LabVIEW
- Automated Test Equipment (ATE) development for both production and engineering applications
- Verification and Validation (V&V) development lifecycle experience for both FDA and UL review

Southwest Research Institute

Engineer

San Antonio, TX
January 2012 – March 2013

- Design and testing of digital, analog, and RF electronic circuits
- Embedded firmware development in C for multiple 16/32-bit architectures, with and without RTOS
- Development of wireless systems implementing GSM, WiFi, proprietary RF, and satellite links
- Design of spaceflight communications electronics for NASA's CYGNSS mission
- Department of Defense security clearance

Northern Embedded Solutions LLC*Founding Partner & Engineer*Fairbanks, AK
May 2011 – January 2012

- Design and implementation of radar system/subsystem tests, culminating in FAA technical report
- Hardware and software development and testing of radar signal retransmitter
- Conceptual development of custom portable 3D radar

University of Alaska Fairbanks – ECE Department*Research Assistant*Fairbanks, AK
June 2008 – May 2011

- Assessment of US Army surplus Lockheed Martin radar systems through both field and lab tests
- Development of spatial interferometric technique to obtain 3D target position data, including modifications to radar RF frontend, addition of second antenna, and custom data acquisition system
- Development of software for radar control, data collection, and signal processing

Naval Surface Warfare Center – Crane*Electrical Engineer Intern*Crane, IN
May 2007 – August 2007

- Development of tests for RF and digital subsystems of ballistic missile early warning radar systems
- Reverse engineering, repair, and redesign of subsystems for reinsertion into larger systems
- Design, test, and fabrication of RF and digital PCBs

Marathon Petroleum Company*Project Management Intern*Findlay, OH
January 2006 – June 2006

- Management of asphalt storage facility projects including electrical, mechanical & civil engineering work

RESEARCH EXPERIENCE

Alaska Research CubeSat Program*University of Alaska Fairbanks*Fairbanks, AK
September 2009 – May 2011

- Development of Alaska Research CubeSat (ARC), a student-designed 1U CubeSat
- Systems engineering co-lead – System-level design and management of subsystem teams
- Communications lead – Design and implementation of both ground station and spacecraft subsystem
- Wireless link design and analysis using Satellite Tool Kit (STK)
- NASA Preliminary Design Review preparation and participation
- ARC launched aboard NROL-55 on October 8, 2015

AMJOCH Telescopic Observatory Modernization*Michigan Technological University*Houghton, MI
August 2007 – May 2008

- Assessment and modernization of non-functional telescopic observatory automation systems
- Implementation of computer controlled motorized dome and iris
- Design of the optical system to mount image sensor and spectrometer to telescope
- Development of Kalman filter algorithm for tracking satellites against background star field

FM Passive Radar*Michigan Technological University*Houghton, MI
January 2007 – May 2008

- Development of a bistatic passive radar that utilizes commercial FM broadcasts
- Development of C software in a Linux environment to operate digital receiver
- Processing of data collected by the University of Washington Manastash Ridge Radar to filter noise from the data, classify targets, and compile statistics about targets

EDUCATION

M.S. Electrical Engineering*University of Alaska Fairbanks*

May 2011

B.S. Electrical Engineering*Michigan Technological University*

May 2008