

Camilo Tejeiro
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Skills

Areas of Knowledge

Circuit Design, PCB Design, Analog Circuits, Embedded Systems, Firmware Development, Software Development.

Technical Skills

KiCad EDA, Eagle PCB, Altium Designer, SPICE, C, Python, QUCS, L^AT_EX, Java, Bash, Linux, PHP, HTML, CSS, MySQL, C++, Verilog, C#.

Personal Skills

English bilingual proficiency, Spanish bilingual proficiency, Self-driven, Strong work ethic, Perseverant, Team-oriented.

Education

University of Washington

Cumulative GPA Seattle, WA, USA
3.54 on a 4.0 scale
Bachelor of Science in Electrical Engineering June 2013

North Seattle Community College

Cumulative GPA Seattle, WA, USA
3.81 on a 4.0 scale
Associate of Science June 2010

Peninsula College

Cumulative GPA Port Angeles, WA, USA
3.15 on a 4.0 scale
College Transfer June 2009

Engineering Experience

Ashima Devices

Hardware/Firmware Design Engineer

Pasadena, CA, USA

June 2014 - May 2015

Development of the sensor, communication and flight control hardware for the Hexpuck unmanned aerial device.

Li-Ion Active Battery Balancer Hardware Design

Analog Circuits, PCB Design

Eagle CAD, 4 layers, 176 components

Design of a power management system for monitoring and efficiently balancing the cells on a Li-Ion battery to prolong flight lifetime.

Li-Ion Active Battery Balancer Embedded System

Firmware Development

C, Python, ARM-M0, Linux, GCC, GDB

Design of the firmware state logic for battery monitoring, safety procedures, serial communication and active balancing control.

Motor ESC Hardware Design

Embedded Systems, Circuit Design

Eagle CAD

Development of the embedded system architecture for efficiently controlling the speed of six brushless DC motors. Integration of the control, sense and driver circuitry into a complete device schematic.

Motor FET Driver Power Board

Circuit Design, PCB Design

Eagle CAD, 43 components

Design of a power circuit board for driving a Brushless DC motor at high pulsed currents (rated at 40A per motor max) using a standalone 3 phase MOSFET driver.

Battery Simulator Hardware Design

Analog Circuits, PCB Design

Eagle CAD, 16 components

Design of a stackable cell simulator circuit (constant voltage, variable current output) for creating battery stacks to safely test the active balancing circuit under different operating conditions.

Power Limiter Hardware Design

Analog Circuits, PCB Design

QUCS, Eagle CAD, 22 components

Design of a simple analog circuit to place in series with a simulated battery stack to provide variable current settings while enforcing safe maximum power.

RGB Pixels Array Board

Circuit Design, PCB Design

Eagle CAD, 58 components

Development of a programmable multicolor LED (Pixels) display board for communicating alerts and messages while in flight.

Gyroscope Breakout Board

Circuit Design, PCB Design

Eagle CAD, 8 components

Developed a simple circuit board for testing the functionality of an alternative gyroscope for the flight controller.

GPS Magnetometer Board

Circuit Design, PCB Design

Eagle CAD, 30 components

Development of a printed circuit board for position and orientation purposes: integrating a commercial GPS module, a low noise amplifier, a ceramic patch antenna and a 3-axis digital compass into a single board.

Flight Controller Daughter Board

Circuit Design, PCB Design

Eagle CAD, 48 components

Development of a daughter circuit board for the flight controller to provide GPS positioning, WiFi communication and access to a single-board computer (for communication, image processing and computation heavy operations).

Flight Controller Interface Board

Circuit Design, PCB Design

Eagle CAD, 10 components

Development of an interface circuit board for the flight controller board to allow access to communication channels and hardware peripherals.

RTneuro Inc.

Seattle, WA, USA

Lead Design Engineer

July 2013 - May 2014

Design of the bio-medical sensors, the wireless embedded system and the communication software for the Rainbow wearable health device.

Bluetooth LE Router Application

Software Development

Java, Android API

Design of a service based multi-threaded router application (Bluetooth Low Energy and Internet communication) with task-scheduling, inter process communication and error detection and handling.

Wearable Wireless Health Device Hardware Design

Embedded Systems, PCB Design

Altium Designer, 4 layers, 92 components

Design of the low power wireless embedded architecture and integration of all analog sensors and supporting circuitry into a complete high density circuit board.

Wearable Wireless Health Device Firmware Design

Embedded Systems, Firmware Development

C, ARM, KEIL

Design and implementation of the firmware system logic, the sensors' interface and the wireless communication support (custom Bluetooth Low Energy service).

Low Power Reflectance Pulse Oximeter

Analog Circuits, PCB Design

Altium Designer, Multisim

Design of a low power (low duty cycle) reflectance based pulse oximeter sensor (mixed signal and transistor level design), with software controllable light intensity and calibration support.

Electromyography Sensor

Analog Circuits, PCB Design

Altium Designer, Multisim

Design of a low power (shutdown support), low noise (instrumentation amplifier based topology) mixed signal electromyography sensor (measurement of muscles electrical activity) with software controllable gain and calibration support.

Galvanic Skin Response Sensor

Analog Circuits, PCB Design

Altium Designer, Multisim

Implementation of a differential output, baseline adaptive (can adapt to multiple users) skin conductance sensor.

The Daniel Lab

Seattle, WA, USA

Undergraduate Research Assistant

January 2013 - March 2013

Development of a software application to aggregate gesture and myography data for control purposes.

EMG Hand Tracking and Gesture Recognition

Software Development

C++, Visual Studio

Developed a system to enhance gesture recognition by integrating multiple sensory inputs from a depth camera and an electromyography sensor.

University of Washington

Seattle, WA, USA

Design Curriculum

September 2011 - March 2013

Design of analog circuits and embedded systems for the development of practical engineering applications.

Single Cycle and Pipelined CPU

Embedded Systems

Verilog, FPGA, Altera Quartus

Designed the processors' hardware architectures and developed the individual processors' sub modules to support a MIPS instruction set. Both processors were realized onto a Field Programmable Gate Array.

PVT Invariant Voltage Controlled Low Pass Filter

Analog Circuits

Multisim

Designed a 12th order Butterworth voltage controlled low pass filter (Gm-C implementation) with mixed digital processing added to provide compensation for process, voltage and temperature variations.

Graphic Equalizer Design

Analog Circuits

Multisim

Designed a 7 band graphic equalizer using simulated inductors or Gytrators to synthesize the band pass filters in each stage.

Wireless EMG Actuated Prosthesis for Upper Limb Amputees

Analog Circuits, Firmware Development

C, MSP430, Multisim

Designed a wireless robotic manipulator actuated via electromyography with remote sensory feedback proportional to applied gripping force.

Spacelabs Healthcare

Internship

Issaquah, WA, USA
January 2012 - June 2012

Design of multiple software applications for monitoring patient health in a mobile environment and displaying health data in a remote graphical interface.

WiMM Watch Wireless Health Monitoring System

Software Development

Java, Android API, C#

Developed a system that monitored blood pressure (Bluetooth sensor), pulse oxygenation (Bluetooth sensor) and user activity (Accelerometer) and transmitted possible health alerts and real time data to a remote server via TCP IP.

Neurobotics Laboratory

Undergraduate Research Assistant

Seattle, WA, USA
June 2011 - August 2011

Development of a manipulation experiment for researching feedback delivery techniques and design of a remote feedback device to help amputees.

Comparison of Remote Feedback Modalities for Prosthetic Hand Control

Embedded Systems

Implemented a pneumatic pressure feedback system, conducted virtual manipulation experiments and published a research paper on the findings.

Wireless Vibrotactile Feedback Device

Embedded Systems, Firmware Development

C, MSP430

Design of a low power wireless embedded system for integrating vibrotactile sensory feedback into low-cost prostheses.

Peninsula College

Undergraduate Research Assistant

Port Angeles, WA, USA
September 2008 - June 2009

Academic research for the development of physics applications.

Small Scale Low-energy Electron Linear Accelerator

Applied Physics

Implemented two voltage multipliers to establish the needed potential across the testing tube.

Publications

Tejeiro, C.; Stepp, C.E.; Malhotra, M.; Rombokas, E.; Matsuoka, Y.; , “Comparison of remote pressure and vibrotactile feedback for prosthetic hand control,” *Biomedical Robotics and Biomechatronics (BioRob), 2012 4th IEEE RAS & EMBS International Conference on*, vol., no., pp.521-525, 24-27 June 2012.

Awards and Honors

University of Washington Quarter Dean's List

March, 2013

Award received for maintaining a full time GPA of 3.50 or better during the winter quarter of 2013.

University of Washington Kaiser Aluminum Scholarship

June, 2012

Scholarship awarded for good academic record and leadership potential.

University of Washington Annual Dean's List

June, 2011

Award received for maintaining a full time GPA of 3.50 or better during the 2010-2011 academic year.

North Seattle Community College Merit Scholarship

June, 2010

Scholarship awarded for academic excellence.

Leadership Experience

Osohm Inc.

Founder and Lead Design Engineer

Torrance, CA, USA
June 2015 - June 2016

Development of tools and applications to facilitate the widespread adoption of open technologies in the consumer market.

KipOpen Platform

Software Development

PHP, HTML, CSS, MySQL, Apache HTTP Server, Linux

Design of a viable funding platform (business model) for open technology.

KipOpen Crawler and Search Server

Software Development

Nutch, Solr, Bash, Java, XML

Open Implementation of a crawler, indexer and search engine for directing users to relevant information about open projects.

Android Quotes Display Apps

Software Development

Java, Android API

Development of multiple Android applications to display personal/book quotes in a mobile device.

Water Filtration System

3D CAD Modeling

3D Printing, FreeCAD

Designed a low cost, low maintenance water filtration system with a stackable architecture and multiple filtration stages.

SipText - Text Simple Planner

Software Development

Linux, Bash

Designed a text based planner for everyday use.

Volunteer Experience

STARS Tutoring Program

April 2015 - June 2015

Lake Avenue Community Foundation

Helped low-income middle and high school students complete their homework and succeed in classes.

IEEE IMS/RFIC Symposium Student Volunteer

June 2013

University of Washington

Student volunteer for the 2013 International Microwave and Radio Frequency Integrated Circuits Symposiums.

Note-taker for Disability Resources for Students

January 2011 - December 2011

University of Washington

Volunteered as a note-taker for electrical engineering students with disabilities.

Memberships

Tau Beta Pi Engineering Honor Society

April 2011 - June 2013

Society of Hispanic Professional Engineers

September 2009 - June 2013