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, LaTeX, 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	Seattle, WA, USA
Cumulative GPA	3.54 on a 4.0 scale
Bachelor of Science in Electrical Engineering	June 2013
North Seattle Community College	Seattle, WA, USA
Cumulative GPA	3.81 on a 4.0 scale
Associate of Science	June 2010
Peninsula College	Port Angeles, WA, USA
Cumulative GPA	3.15 on a 4.0 scale
College Transfer	June 2009

Engineering Experience

Ashima Devices   Pasadena, CA, USA
Hardware/Firmware Design Engineer   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 Gyrators 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   Issaquah, WA, USA
Internship   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   Seattle, WA, USA
Undergraduate Research Assistant   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   Port Angeles, WA, USA
Undergraduate Research Assistant   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.   Torrance, CA, USA
Founder and Lead Design Engineer   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 your mobile device. A quote a day?

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. No fancy apps, plain and simple, just text.

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.

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