

# JAKE GARRISON

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## EDUCATION

University of Washington - Seattle, WA

Sept 2011 – Present

B.S. Electrical Engineering (DSP and Communications), Math Minor, Computer science, Art and design coursework

M.S. Electrical Engineering (UbiComp Lab), signal processing and machine learning coursework

**Specialties:** DSP, Computer Vision, Machine learning, AI, Mobile/Web Dev, Audio Processing, Communications, Networking & Security, Power Electronics

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## RELEVANT EXPERIENCE

UbiComp Lab (<https://ubicomplab.cs.washington.edu/>) - Seattle, Washington

Sept 2016 – Present

Ubiquitous computing research lab, led by Prof. Shwetak Patel focusing on mobile health sensing and novel interaction

- Using machine learning, sound and image processing on smartphones to screen and monitor health

Haiku Deck Developer (<https://www.haikudeck.com/>) - Seattle, Washington

June 2016 – Sept 2016

A presentation iOS and Web app startup used by millions. It features Zuru, an AI platform for automation

- Full stack developer and R&D for Zuru and its new features. Wrote production ready Node.js and React.js code

Puppy.ai App - Seattle, Washington

Sept 2015 – Present

Real-time dog breed detection AI using Tensorflow on iOS. One of three working remotely on project

- My duties include creating the classifier and iOS app design. App launches in Spring 2017

Urban Parking App (City of Seattle) - Seattle, Washington

Jan 2016 – Present

Project to help route drivers to open parking spots based off historical data. Entrepreneurial capstone project

- Uses machine learning (boosting via python) to predict parking trends based on 45 million historical transactions

Driver Awareness System (<https://uwecocar.github.io/UW-Infotainment/>) - Seattle, Washington

July 2015 – June 2016

Founded and lead a team designing a system and UI that monitors and logs metrics that contribute to bad driving

- Displays distraction, phone usage, sleep and happiness metrics using C++, Python, Node.js and D3.
- Won Most Innovative use of Data and Best Travel Hack in DubHacks and 3<sup>rd</sup> Place in EcoCAR Consumer Appeal

Tesla Motors Systems Integration – Palo Alto, California

June 2015 – Sept 2015

Integration intern on a small team focused solely on the development of the Model X falcon doors and sensing

- Created production code and contributed to controls, firmware, sensing, processing, testing and validation

EcoCAR Competition Autopilot and Electrical Lead (<http://www.ecocar3.org/>) - Seattle, Washington

Sept 2011 – Present

First Electrical Team Lead, now Assisted Driving (ADAS) Lead. Involved in EcoCAR 2 and 3 since freshman year

- Computer vision and autonomous vehicle controls research and simulation
- Embedded BSP Linux development with bash/python scripting and C/C++ programs
- Project management and collaboration with multidisciplinary students, faculty and industry

Bankroll Bitcoin Miner Startup - Palo Alto, California

June 2014 – Nov 2014

- One of three involved, worked on PCB, firmware, schematic and enclosure design. Never launched

Tesla Motors Power Electronics - Palo Alto, California

June 2014 – Sept 2014

Power Electronics intern focused on the high voltage electric powertrain for the Model S P85D Insane mode

- Testing and validation on existing parts (temperature and current cycling)
- R&D for future technology (specifically high voltage fuses, contactors and charging plugs)
- Creating professional CAD, drawings, schematics, and pcb designs

Electric Car Conversion (<http://electricgti.blogspot.com>) - Spokane, WA

Jan 2010 – May 2012

Personally designed, funded and converted a gas powered Volkswagen GTI to fully electric

- Designed and hand built the high voltage motor controller along with several metal/wood components
- Awarded engineering scholarship, admission to UW and invited onto the team

Ion Beam Research Assistant – Seattle, Washington

May 2013 – Feb 2014

Research Assistant for Professor Bruce Darling, UW Electrical Engineering

- Learned to simulate and design circuit boards using NI LabView Multisim and Ultiboard Work

Custom Music Equipment Designer (<http://www.verellenamplifiers.com>) - Seattle, Washington

July 2011 – 2014

Personally designed, built and sold guitar pedals and other music gear

- AC and DC Circuit analysis and troubleshooting experience including tubes, transistors and amplifier circuits
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## SCHOLARSHIPS AND AWARDS

4.0 in multiple capstone projects (UW), 2<sup>nd</sup> place Autopilot and 3<sup>rd</sup> place Consumer appeal (EcoCAR 3) – San Deigo, CA

Spring 2016

Most innovative use of data (from GE) and Best travel hack award (from Concur) at DubHacks – Seattle, WA

Fall 2015

1<sup>st</sup> place Electrical presentation and 3<sup>rd</sup> place Mathworks presentation (EcoCAR 3) – Seattle, WA

Spring 2015

2<sup>nd</sup> place Overall, Battery Pack Design and Electrical presentation (EcoCAR 2) - San Diego, CA

Spring 2013

Washington Society of Engineers - Spokane, WA

Spring 2011

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## AREAS OF TECHNICAL EXPERTISE

Platforms: Windows, OSX, Linux, Android, iOS, Raspberry Pi, Arduino, NXP, Electron, Xcode, QT, CATIA, NI Multisim, NX, LabView  
Language: C, C++, Bash, Python [Tensorflow, OpenCV, Numpy, Scikitlearn], Obj C, Java, avaScript [Node, React, D3], HTML5/CSS3, Matlab  
Protocols: CAN, SPI, UART, GPS, Bluetooth, TCP, UDP, HTTP, FTP, SSH, Bitcoin, Bittorrent