

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 (AI, Machine Learning and Computer Vision), starting Fall 2016

Specialties: DSP, Computer Vision, Machine learning, AI, Full Stack Dev, Audio Processing, Communications, Networking & Security, Power Electronics

RELEVANT EXPERIENCE

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

June 2016 – Present

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. Using Node.js and React.js

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

Image Classification App - Seattle, Washington

Sept 2015 – Present

Project involving image recognition and sharing on an iOS platform. One of three working remotely on it

- Uses convolutional neural network (trained on ImageNet) and other image processing techniques

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 3rd 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

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

EcoCAR Competition ADAS 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
- Embedded BSP Linux development with bash/python scripting and C/C++ programs
- Modeling high and low voltage Li-Ion battery systems in Simulink, Matlab and NX CAD
- 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 No longer maintained

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 – Present

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

SCHOLARSHIPS AND AWARDS

Perfect grades in two capstones (UW), 2nd place Autopilot and 3rd place Consumer appea (EcoCAR 3I – 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

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

Spring 2015

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

Spring 2013

Washington Society of Engineers - Spokane, WA

Spring 2011

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 [OpenCV, Numpy, Scikitlearn], JavaScript [Node, React, D3], HTML5/CSS3, Matlab, Java
Protocols: CAN, SPI, UART, GPS, Bluetooth, TCP/IP, UDP, HTTP, FTP, SSH, Bitcoin