Brennan Keegan

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Experience

Tesla Motors — **Palo Alto, CA**
Test Engineer – Vehicle Electrics — **Jan. 2015 - Present**

- Owns design, execution, and data analysis for reliability and development testing for multiple high-current PCBs throughout Tesla's low voltage architecture, with 12+ validated and shipped parts
- Designs custom circuitry for test infrastructure in Altium Designer, including a contactor driver board and in 2016, close involvement with the "Low Voltage Box" PCB—improved design and layout in 12V buck converter to support 2 times higher current
- Automates testing using Python and microcontroller scripts to cut manual work time and improve data analysis
- Debugging of circuit boards (CAN, I2C, SPI) and test equipment to understand and address issues
- Analyzes large data sets to interpret test results, directly used to expose risks and build design confidence
- Received promotion after 11 months with Tesla

Climate Environment Services Group — **Shanghai, China**
Data Collection Team Manager — **June 2013 - Aug. 2013**

- Designed and implemented efficient process for mass data collection of Chinese transport statistics at a small start-up
- Managed team of five Chinese interns in collecting and importing over 100,000 data points into company transport database during a 5 week period
- Used Chinese language and research skills to investigate and document the body of China's available transport data

Relevant Projects

Mixtape Audio Board (Project Page) — **Oct. 2016 – Dec. 2016**

- Compact PCB for use as a modern "mixtape" to share playlists and recordings, parts received and built Dec. 2016
- Audio circuit using Teensy 3.2 microcontroller and a Class-D amplifier IC
- Bluetooth control using plug-in module, with power from an Li-Ion 18650 battery

Li-Ion Charge Board (Project Page) — **Aug. 2016**

- 18650 lithium ion charger board to provide up to 4.2V power for portable projects; charges battery via micro-USB
- Charge control IC regulates constant current and constant voltage modes for effective charging

Education

The Hopkins-Nanjing Center — **Nanjing, China**
for Chinese and American Studies — **June 2014**
M.A. International Studies

- Concentration: International Economics
- Curriculum primarily taught in Mandarin
- 2014 "Outstanding Master's Thesis" Award
- Master's Thesis: ***Analysis on Efficient Distribution of China's Wind Energy***
  Chinese-language thesis used Python and GIS data to examine regional differences in per-MWh cost of wind vs. coal

University of Maryland, College Park — **College Park, Maryland**
B.S. Electrical Engineering — **May 2012**

- GPA: 4.00
- 2012 University Medal Finalist (5 finalists selected from 5,000+ students)
- Minor: Music Performance (Piano)

Interests: Open-source Hardware, Folk Songwriting, Hiking, Travel