

# OWEN BRAKE

Waterloo Mechatronics Engineering - 2024 · [OwenBrake.com](https://OwenBrake.com) · 650-307-1782 · [me@OwenBrake.com](mailto:me@OwenBrake.com)

## SKILLS

- End-to-End Systems Design
- HV (High-Voltage) Systems
- Resource-Constrained, Real-Time Systems
- Embedded HW and FW
- Li-ion & LiFePO<sub>4</sub> Battery Modelling
- Robotics
- Mechanical Design and Integration
- Inverter / Motor Control
- Wireless Charging

## WORK EXPERIENCE

### Stealth Company

*Head of Engineering*

**August 2024 - Present**

San Francisco, CA

- Designed phased array system to focus powerful ultrasound waves
- Redacted for confidentiality

### Neuralink

*Firmware and Hardware for Implant Systems*

**Summer 2023**

Fremont, CA

- Designed safety critical, real time firmware for Neuralink implant and charger system.
- Designed and performed critical RF testing and qualification for communication and charging systems
- Developed on validation system and caught critical architecture, compiler and functional defects

### Parallel Systems

*Hardware Engineer*

**Summer 2022, Winter 2023**

Los Angeles, CA

- Designed HV PCBs in Altium and brought up RTOS firmware for said boards
- Debugged critical HF and VHF communication systems including Gigabit Ethernet systems
- Ran the HW Test Team including bringing up full vehicle HITL systems.

### Tesla

*Firmware - Drive Inverter Systems*

**Fall 2021**

Palo Alto, CA

- Developed highly-performant, resource constrained firmware for the Drive Inverter boards
- Developed and deployed mission-critical features for millions of production vehicles
- Developed firmware across multiple chip architectures to accommodate for 2020/2021 Semiconductor Shortage

### Apple

*Embedded Firmware Engineer*

**Winter 2021**

Remote

- Specific features are currently redacted to preserve confidentiality

### Ford Motor Company

*Software Engineer*

**Summer 2020**

Remote

- Worked on system to process vehicle core dump files into easily readable, accessible and shareable online formats using GDB and Java
- Rewrote permissions system to enable complex and nested conditions while maintaining performance on system with over 1 billion database records in Java and SQL

### Groupdesk

*Full Stack Developer*

**Summer 2019**

Toronto, ON

- Developed CRUD services, using Angular to remove user dependence on technicians

## PROJECTS AND TEAMS

### Waterloo Formula Electric Team (Technical Lead)

**September 2019 - June 2024**

- Lead team from <25 members and no vehicle to a competitive team with 100+ members racing at all major North American Competitions.
- Designed and fabricated major electronics including 600V DC-DC [\[link\]](#), 600V 100kW inverter, custom BMS, etc.
- Implemented Vehicle Dynamics Algorithms like: Traction Control, Torque Vectoring, Endurance Mode for vehicle
- Developed accurate state of charge algorithm using Coulomb Counting and Voltage Maps [\[link\]](#)