

# TREVOR O'LEARY

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## EXPERIENCE

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### TESLA

San Francisco, CA

#### *Senior Software Engineer & Leader*

2022 - Current

- Created test automation product for manufacturing of Model S/X, 3/Y and Cybertruck vehicle controllers. Now leading the team who sustains this product.
- Designed and built cloud infrastructure for global vehicle controller testing results. Developed predictive analytics dashboard to assess production readiness and risk
- Engineered the calibration system for Optimus (Tesla Robot) joint encoders, created custom hardware and software solutions to streamline processes
- Consolidated software solutions between global teams - reducing engineering resources required for vehicle controller hardware validation

#### *Electrical Test Engineer*

2021 - 2022

- Developed schematic parsing tool enabling firmware SIL testing for 'day-1' firmware readiness, automated pre-release PCB validation checks, and accurate manufacturing test coverage reports
- Lead end-to-end project management for vehicle production; orchestrated planning, stakeholder communication, and on-time delivery of critical milestones to senior leadership

### McGILL UNIVERSITY FORMULA ELECTRIC FSAE

Montreal, QC

#### *Lead Electronics Designer*

2018 - 2020

- First Place Engineering Design for EV class at Formula Lincoln 2019
- First Place Overall in EV class at Formula Lincoln 2019
- Architected and manufactured vehicle electronics system, including custom controller, battery management system, and distributed sensing hardware
- Mentored new members joining electronics, delivering technical training across diverse experience levels

## PROJECTS

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#### *Articulated Mirror Installation* – [www.trevoroleary.com/portfolio/segments](http://www.trevoroleary.com/portfolio/segments)

2024

- Designed and manufactured art installation with 25 synchronized articulating mirror segments
- Integrated 50 stepper motors and controllers communicating over I<sup>2</sup>C, leveraging ESP32 microcontroller and Perlin Noise algorithm for natural pattern movements

#### *Reactive Ambient Light Installation* – [www.trevoroleary.com/portfolio/ex](http://www.trevoroleary.com/portfolio/ex)

2023

- Created IOT-enabled interactive home installation incorporating real-time audio processing and dynamic ambient light control, creating responsive environment synchronization

#### *Automotive Test Equipment* – Capstone Project, McGill University

2020 - 2021

- Designed and manufactured electricals lab equipment with a feature set specifically for automotive testing.
- Includes: DC Load, Analog IO, digital I/O, CAN, LIN, programmable & fixed power supplies

#### *Music Production* – [www.trevoroleary.com/portfolio/music-production](http://www.trevoroleary.com/portfolio/music-production)

2010 – Current

- Music productions using analog/digital synthesis, piano, guitar and digital signal processing

## EDUCATION

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### McGILL UNIVERSITY

Montreal, QC

#### *Bachelor of Electrical Engineering* – 3.67/4.0

2015 - 2020

- First place in Student Design Principles & Methods competition
- PCBA Designer and Research Assistant for Doctoral-level ASIC amplifier project

## SKILLS

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Firmware: SPI, CAN, Ethernet, LIN, I<sup>2</sup>C, C++, Platform IO

Hardware: Schematic Design, PCB Layout

Software: Python, Altium, React, HTML, MongoDB, LT Spice, MATLAB, Fusion 360, Ableton, DaVinci Resolve

Other: Guitar, Piano, Laser Cutting, Wood Working, Sound Design, Video Editing