

# KIVANC YILDIZ

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## EXPERIENCE

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### Tesla, Inc.

Bay Area, California

Senior Mechanical Design Engineer – Lead Rotor Engineer

Dec 2022 – Present

- Leading mechanical design for current and future generations of rare-earth free motors
- Managing 3D CAD and 2D drawings for rotor components and assemblies in production
- Assessing structural integrity of designed parts through CAE analysis using **ANSYS**, with Topology Optimization
- Launched multiple products made of varying manufacturing methods like injection molding, die casting, stamping, sintering, and machining
- Mentoring junior engineers and interns
- Developing relations with suppliers by **travelling globally** and understanding their constraints
- Collaborating with vendors **on-site** to improve design with DFM practices and identifying opportunities for process improvement

Mechanical Design Engineer

Feb 2020 – Dec 2022

- Owned several motor components, including the rotor shaft and plastic phase junction, for Model 3/Y and Cybertruck, overseeing them from the design phase through manufacturing feedback, validation testing, and launch
- **Released** 3D CAD and 2D **drawings** for motor components
- Designed test fixtures for various stator component testing
- Conducted sub-component testing on rotor parts and reported on the data
- Developed an automated high voltage electrical tester for partial discharge using **Python**

Intern, Motor Mechanical Design

Aug 2019 – Dec 2019

- Helped develop a growth measurement system for the carbon sleeve rotor by processing laser sensor data in Python
- Performed **stack ups** with thermal expansion for assembly components
- Modeled products with **CATIA V5** and created engineering drawings
- Analyzed mechanical components for failure

Intern, Test Engineering

Jan 2018 – Aug 2018

- Increased serviceability and lifetime of the Drive Unit Controller tester by creating custom **PCBs** using **Altium**
- Identified connectors on vehicle level wiring schematic to design and fabricate custom enclosures for low voltage testers with power supplies, relays, CAN dongles, and displays
- Designed and sourced various testing fixtures

## ACADEMIC RESEARCH

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University of Ottawa / National Research Council Canada

Sep 2018 – Dec 2019

*Transpiration Cooling Efficiency of Porous Materials*

Ottawa, Ontario

- **Published** a paper on Pressure Sensitive Paint Study of Transpiration Cooling Efficiency of Porous Materials and **presented** at ISABE 2019 conference in Australia (ISABE-2019-24269)
- Developed **testing procedures** for systematic paint application and data collection using a low-speed wind tunnel, CCD camera, and a UV light source
- Implemented a variation of polynomial regression model in **Python** using **Sci-kit Learn** to identify partial pressure of oxygen at any given location on the sample using **pressure sensitive paint**

## EDUCATION

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University of Ottawa

Sep 2013 – Jun 2019

Bachelor of Applied Science, Mechanical Engineering (CO-OP)

Ottawa, Ontario

*President of Mechanical Engineering Student Society*

Scholarships: University of Ottawa Merit Scholarship (2019), NSERC Industrial Research Award (2018, 2017)