

Kivanc Yildiz

kivancyildiz.me

(650)-284-6313

forkivanc@gmail.com

PROFESSIONAL SUMMARY

Staff-level mechanical engineer with a track record of taking complex, multi-disciplinary hardware from concept through prototype and into production at Tesla and Ford. Proven across mechanical, electrical, and thermal domains with hands-on experience building and instrumenting hardware, writing system specifications, and owning cross-functional development.

EXPERIENCE

Ford Motor Company

Palo Alto, California

Staff Motor Mechanical Design Engineer - Technical Lead

Oct 2024 - Present

- Integrated the resolver rotor into the rotor assembly, verifying through structural analysis that shaft torsional deflection stays within the resolver's allowable angular offset
- Designed custom oil routing hardware for motor dynamometer testing, including the O-ring sealing interfaces
- Reduced component cost by 21% through supplier-facing DFM initiatives, first-principles analysis of part processing, and introduction of novel manufacturing methods
- Authored inspection plans for critical to function (CTF) features, resulting in zero fit failures during prototype builds and enabled statistical process control (SPC) at the supplier for mass production
- Directed the mechanical integration of the motor's thermal management in partnership with the thermal analysis team by engineering the stator fin geometry and the rotor cooling paths to avoid thermal throttling
- Overseeing the creation and maintenance of 3D CAD models and 2D drawings using 3DEXperience (CATIA V6)
- Built a Python tool that generates clash-free hairpin winding patterns via Google OR-Tools and produces full 3D stator CAD assemblies with conductors, enamel, insulation, and lamination in minutes (previously weeks)

Tesla, Inc.

Palo Alto, California

Senior Motor Mechanical Design Engineer - Lead Rotor Engineer

Dec 2022 - Sep 2024

- Owned end-to-end rotor design for Cybertruck, Robotaxi, and Model 3/Y refresh, directing all structural validation while collaborating with electromagnetics, thermal, and motor controls teams
- Applied topology optimization to cut mass by 15% while exceeding power density and fatigue life requirements
- Launched multiple products made of varying manufacturing methods like injection molding, die casting, stamping, sintering, and machining by collaborating with external CMs and JDMs
- Eliminated a source of NVH by directing an on-site supplier process change, traced issue to inadequate spline gear metrology and mandated adoption of temperature controlled inspection rooms
- Executed rapid, hands-on prototyping and failure analysis, personally building and instrumenting Alpha units in the lab to validate FEA models and perform root cause analysis on test failures to drive design revisions

Motor Mechanical Design Engineer

Aug 2019 - Dec 2022

- Directly Responsible Engineer for injection molded plastic phase junction for Model 3/Y and Cybertruck, implementing a design change that eliminated an assembly risk on the assembly line
- Designed the rotor shaft to host a light-based wireless telemetry sensor for instrumented rotor testing
- Performed tolerance stack ups with thermal expansion for assembly components

EDUCATION

University of Ottawa - Bachelor of Applied Science, Mechanical Engineering

SKILLS

Mechanical Design: Geometric Dimensioning & Tolerancing (GD&T), Statistical Tolerance Analysis, Mechanism & Fit Design, DFM/DFA, Structural & Fatigue Analysis, Thermal Management, Topology Optimization

CAD & CAE Software: CATIA 3DEXperience, Solidworks, ANSYS Workbench, Python, Minitab