JANEK DE SILVA

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Actively seeking a challenging position where I can accelerate cradle-to-grave product design, manufacturing, testing and high-volume production in a innovative, curious and driven environment.

TECHNICAL SKILLS

Mechanical: First principles engineering, Complex geometrical packaging, Tolerance analysis, Subsystem integration, Supplier relations, GD&T ASME Y14.5, DFM & DFA, Cost optimization
Software: Siemens NX, CATIA V6, ANSYS, Solidworks, Python, C++, MATLAB, JavaScript, HTML
EE & Circuit Design: Wire Harness Routing, Altium/KiCad PCB creation and design, Power Electronics

EXPERIENCE

Wisk Aero (Boeing) — San Francisco, CA
Mechatronics Engineer — June 2024 - Present
- Engineered and manufactured **custom electro-mechanical chokes**, meeting tight weight constraints
- Redesigned multiple components using **injection-molded conductive composites**, reducing weight by 75%
- Created innovative **HV mosfet thermal management** system using heat pipes, thermal straps, custom heat spreaders and adhesives, significantly improving system thermal stability and performance
- Performed as **Scrum Lead** for controller team, handling Jira updates, management requests and hardware testing

Tesla, Inc — San Francisco, CA
Mechanical Design Engineer — Jan 2023 - June 2024
- Spearheaded development of new manufacturing technology with international vendors for High Voltage Connectors on multiple Next Gen Programs, saving over **$8 per product (60%) and $ 20M per year**
- **Owned ground-up design of HV Connector** using **parametric modelling** including testing and validation, including **die cast, stamped, machined and injection molded** parts, facilitating **high-volume automation**
- Developed unique **Laser welding for High voltage products** tech to **reduce cycle times by 50%** and **lower BOM count by 75%** per assembly, harnessing **GD&T** and thermo/materials knowledge
- Designed, **tested** and **production released** critical components in tight timeline for **Cybertruck battery**
- Utilized **statistical tolerance analysis** and **DFM/DFA** to create injection molded plastics overmolded to busbars and mechanically simulated using **ANSYS** to root cause failures
- Created and maintained **detailed product documentation**, design presentations and testing procedures to facilitate cross-functional team collaboration

Lightship RV — San Francisco, CA
Mechanical Design Engineering Intern - *click here for more information* — May 2022 - Aug 2022
- Used thermo/fluid dynamics to design the **complete liquid cooling system** for the maiden vehicle prototype
- Designed, prototyped and fstress-tested a **custom mount for Starlink** Satellite Receiver using various rapid prototyping methods
- Fabricated all metal parts in-house and assembled the system, tested using sensors to verify functionality

Center for Built Environment — Berkeley, CA
Product Design Engineer - *click here for more information* — Aug 2020 - May 2022
- Completed **full mechanical product design cycle** of personal thermal comfort system in Hyken office chair, producing 20 complete systems containing 110 components using **Solidworks parametric modelling**
- Innovated **completely modular** plug-and-play system with a detailed focus on **minimal packaging** in tight constraints and budget, to ensure **20% profitability** with low manufacturing cost

Formula Electric at Berkeley — Berkeley, CA
Battery Design Team Lead - *click here for more information* — Aug 2021 - Aug 2022
- **Designed entire mechanical system** for battery on maiden FSAE electric car, meeting all load requirements
- Performed **thermal analysis, loading simulations, electrical system planning** and wiring, and standardized fasteners to complete the project on a tight student budget, used **Solidworks**

EDUCATION

University of California, Berkeley — Aug 2019 - Dec 2022
BS Mechanical Engineering — *GPA: 3.8*

DESIGN PROJECTS — Personal

IOT integrated aquarium controller | *Mechatronics Design* — Jan 2024
- Creating nano-aquarium integrated controller (ESP32 and integrated circuits) to fill niche market gap