Bryan Luippold, EIT

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linkedin| Fremont, CA (open to relocation)

Work Experience

ISC International **December 2019 - present**

Mechanical Design Engineer *Santa Clara, CA*

- Designed precision mechanical assemblies (TCUs, lids, chassis, tools) for semiconductor test systems, ensuring manufacturability across CNC machining, injection molding, and sheet metal processes
- Created production-ready 2D drawings with ASME-compliant GD&T and performed tolerance analysis (Worst Case, RSS) to ensure reliable assembly and system performance
- Developed modular, pneumatically-actuated gantry systems with with interchangeable adapter plates, designed for alignment and compatibility with evolving customer PCB assemblies and incorporated PCB stackup and DFM considerations to ensure long-term reusability and manufacturability
- Conducted thermal, structural, and fluid simulations (FEA and CFD) in ANSYS Icepak and SolidWorks Flow to optimize performance of cooling systems for high-power (1kW+) electronics, improving thermal efficiency by 30%
- Spearheaded R&D for precision thermal control solutions including liquid-cooled, Peltier-cooled, Kapton-heater, vapor chambers, heatsinks, and heatpipes expanding product capabilities for high-performance IC packages
- Designed mechanical lids with spring-loaded pushers to deliver controlled, high contact force on validation sockets across partially-lidded customer devices, ensuring reliable electrical contact and consistent performance during testing
- Designed sheet metal enclosures for TCU controllers and created wiring diagrams for custom wire harnesses; assembled complex electrical systems including amplifiers, power supplies, PID controllers, and Arduino boards to enable full system integration and validation
- Utilized simulation and data acquisition instruments for FEA, CFD, and industrial test standards to conduct performance evaluations of components and assemblies in environmental, thermal, and structural testing to ensure product reliability under vibration, impact, and thermal stress conditions
- Conducted DOE studies to optimize thermal system parameters, using statistical techniques to guide engineering down-selection and validate product performance
- Managed large CAD assemblies using SolidWorks & PDM systems, ensuring design feasibility and efficient ECO processes for revisions on nonconforming components
- Designed and fabricated functional prototypes using 3-D printing and CNC machining; selected materials based on mechanical and thermal requirements and built proof-of-concept systems for design validation
- Scaled production capacity of TCUs by 120% YoY, transitioning assembly and manufacturing to overseas team via comprehensive documentation and training

Education

University of California, Santa Barbara **June 2019**

Bachelor of Science in Mechanical Engineering

Class Projects

FitNest **Sep 2018 - June 2019**

Senior Capstone Project *Santa Barbara, CA*

- Built an in-home, semi-autonomous physical therapy system for babies at risk of developing cerebral palsy, winning the "Excellence in Mechanical Engineering" award at the 2019 UCSB Design Expo
- Modeled full assembly using SolidWorks, performed structural FEA to analyze part yields, and machined custom parts, and developed a mobile app for autonomous control in Swift using an Arduino Wifi board
- Performed analysis involving rotational kinematics to calculate required dynamics to mimic tilting and movements normally exhibited in physical therapy sessions with a central mechanism containing linear actuators

Soldering Iron **Mar 2019 - May 2019**

Thermal FEA Project *Santa Barbara, CA*

- Analyzed mesh sizes, materials, geometries, and heater cartridges to yield best thermal performance in design of a custom soldering iron for the UCSB College of Engineering and wrote progress reports on iteration results

Plastic Injection Molding Machine **Oct 2017 - June 2018**

Junior ASME Project *Santa Barbara, CA*

- Led the design of the injection unit for an electric injection molding machine for the UCSB College of Engineering by utilizing Simulink to simulate and refine the PID controller for temperature regulation using thermocouples and cartridge heaters and using servo motors to facilitate the reciprocating screw drive in extrusion and ejection

Skills

Software SolidWorks | ANSYS Icepak | COMSOL | Python | MATLAB | Arduino

Specializations FEA | CFD | Thermal Design | GD&T | CNC Machining | 3-D Printing | Structural Analysis