Bryan Luippold, EIT

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 LinkedIn | Portfolio | Fremont, CA (open to relocation)

Work Experience

ISC International **December 2019 - present**

Mechanical Design Engineer *Santa Clara, CA*

- Led the complete design and development lifecycle of customer products, from concept ideation and CAD modeling to manufacturing release and post-deployment technical support, including failure analysis and field troubleshooting
- Designed precision mechanical assemblies (temperature control units, lids, chassis, tools) for semiconductor test systems, ensuring manufacturability across CNC machining, injection molding, and sheet metal fabrication methods
- Generated ASME Y14.5-compliant 2D drawings with GD&T and conducted detailed tolerance stack-up analyses (Worst Case, RSS) to ensure fit, function, and assembly robustness
- Engineered pneumatically-actuated gantry systems with modular 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
- Performed 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 40%
- 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 closed-loop liquid-cooling systems including custom cold plates, flow paths, and manifolds; postprocessed CFD/FEA results to validate pressure drop, heat flux, temperature gradients, and thermal resistance, and compared with empirical DAQ data for accuracy
- Designed compact, EMI-shielded sheet metal enclosures and created electrical schematics and harness routing diagrams for integrated systems incorporating PID controllers, power supplies, amplifiers, and microcontroller-based control logic and assembled and tested units for qualification
- 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
- 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

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, Autodesk
Specializations	FEA, CFD, Thermal Design, GD&T, CNC Machining, 3-D Printing, Structural Analysis, Wire Harnesses