Herbert Hsu

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WORK EXPERIENCE

Raxium (part of Google) | Fremont, CA Jan 2025 - Present

Product Operations Engineer - µLED AR Displays

- Drove early-stage operational stability by identifying novel production issues, establishing RCA frameworks, and implementing data-driven solutions, enabling NTI of monolithic µLED displays in first-gen product category (AR glasses).
- Initiated and executed process improvements across multiple back-end operational areas, designing new workflows and automating tasks (using Python/SQL) from scratch within 2 months.
- Enabled a 200% production volume ramp by developing scalable manufacturing playbooks and deploying automated systems for real-time reporting and unit-level traceability.
- Drove product and process qualification by managing multiple vendors and resolving critical manufacturing issues in SMT and IC packaging, ensuring on-time material readiness for reliability validation.
- Orchestrated end-to-end quality and process improvements by partnering with downstream suppliers and CMs to execute joint DOEs, resolve critical quality deviations, and implement robust data-sharing frameworks for transparent collaboration.

Apple Inc. | Sunnyvale, CA Jul 2022 - Jan 2025

Manufacturing Quality Engineer - Acoustic Modules

- Led all quality efforts for speaker module manufacturing on iPad/iPhone programs by working with overseas vendors and engineering team from concept to high volume mass production.
- Developed measurement and reliability test methods for 6x NPI programs to ensure the design objectives are met
- Resolved manufacturing/design issues with cross-functional teams to develop corrective actions/process improvements with techniques including DOE, failure analysis, Cpk, GR&R, PFMEA, etc. Successfully ramped 5x iPad programs with new material and technology introduction meeting yield and supply targets with original program timeline
- Managed 4 international vendors by conducting line audits to ensure process/inspection equipment compliance and readiness
- Presented to operations and cross-functional executives on top issues and progress on yield targets weekly. Identified and mitigated design and program risks in early development stages to ensure critical milestones were met on time.

Intel Corporation | Santa Clara, CA Aug 2019 - Jul 2022

Technology Development Module Process Engineer – EUV Pellicles

- Operated and oversaw a 24/7 module (5x tool owner), worked with technicians to integrate and ensure quality of manufacturing process of semiconductor EUV photomasks. Ramped up module output by 230%.
- Led DOE, SPC analysis, root cause analysis, and implemented permanent corrective actions with cross module teams to meet specifications for manufacturing processes. Increased product yield by 40%.
- Worked with internal groups and/or equipment supplier to identify shortcomings, proposed and evaluated hardware modification to mitigate issues, supported preventative maintenance/repairs, and developed next-gen tool to support customer product requirements.
- Designed, built, and tested in house jigs/fixtures and tools to exploit the understanding gained in research and introduce new novel processes (1x patent). Responsible for building mechatronics module and front-end UI of automatic in-house inspection tool that decreased processing time by 30% and cost savings of ~$640k (Department Award)
  Skills: SolidWorks, FEA, Python (Data analysis/visualization, Mechatronics), SQL, SPC, rapid prototyping, DOE

University of Michigan Transportation Research Institute | Ann Arbor, MI Sep 2018 - Dec 2018

Engineering Intern

- Designed, built & tested canine crash test dummies for commercial pet restraint products. Created first prototype with moveable joints within 4 months. *Tools: SolidWorks*

GM/University of Michigan Smart Materials and Structures Lab | Ann Arbor, MI Sep 2017 - Dec 2017

Research Assistant

- Designed & built a high-speed CNC bladder maker capable of producing heat- sealed inflatables up to 4'x4' for General Motors. Assessed printer quality by testing 11 samples with different geometry. *Tools: SolidWorks, G-code (See portfolio)*

EDUCATION

University of Michigan | Ann Arbor, MI May 2019

B.S.E in Mechanical Engineering, Magna Cum Laude

Tecnun, Universidad de Navarra | San Sebastián, Spain Summer 2016

SKILLS

Engineering Skills: Design for Manufacturability (DFM), GD&T, engineering drawings, machine shop tools, 3D printing, microcontrollers, lab equipment, DOE, heat transfer analysis, structural analysis, thermodynamics, FEA, Data Analysis.

Computer Skills: MATLAB, SolidWorks, Simulink, C++, Java, Python, G-Code, HTML, Linux, JSON, ADAMS, Hypermesh, MS Excel, PowerPoint, JMP, SQL.

Languages: English (native), Mandarin (fluent), Spanish (beginner)