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PROFESSIONAL SUMMARY

Mechanical and Aerospace Engineer with 3+ years developing audio hardware from concepts and prototyping through qualification and overseas production. Experience in injection molding, sheet metal, tolerance stack analysis and production tooling, using Siemens NX, SolidWorks and Creo. MSc in Computational Engineering and Design with Dyson-funded acoustic research.

WORK EXPERIENCE

Mechanical Engineer - INVISIO Communications Ltd., UK *Aug 2023 – Present*

A world-leading provider of robust high-noise defense headsets (formerly Racal Acoustics)

- Led the redesign of RAPTOR in SolidWorks, a flagship ruggedized headset, resolving seven failure modes behind a 25% reject rate; retooled 35 injection-molded plastic and rubber parts.
- Performed tolerance stack analysis on headsets, boom arms, respirator interfaces and throat microphones; resolved a critical RAPTOR connection issue by checking component engagement at both tolerance extremes.
- Developed robotic adhesive dispensing and pneumatic tooling for microphone membranes, raising yield from 40% to 98% and reducing production time by 75%.
- Designed four headset-respirator cables and two throat microphones in Creo/Windchill, taking them to mass production through salt-fog, thermal and cable-bend qualification.
- Redesigned a microphone boom arm to increase stiffness fourfold; qualified the design through thermal, vibration and water ingress testing to MIL-STD-810G.
- Designed and 3D printed assembly and test fixtures, refining operator ergonomics; reviewed engineers' drawings and assemblies and worked with manufacturers in China, Malaysia, France and Slovakia.

Manufacturing and Quality Engineer - Harlow Group Ltd., UK *May 2022 – Feb 2023*

A provider of sheet metal assemblies for aerospace and general engineering working to ISO 9001

- Planned processes including laser cutting, punching, forming, welding, finishing and final assembly.
- Measured parts using CMMs, height gauges and verniers; produced first-article inspection reports (FAIRs), nonconformance reports (NCRs), and issued corrective action reports (CARs).

EDUCATION

MSc Computational Engineering and Design, University of Southampton *Jan 2021 – May 2023*

Dyson-sponsored research on fan noise reduction at the Institute of Sound and Vibration Research (ISVR)

- Modified outlet guide vanes (OGVs) and fan blades using Siemens NX by introducing slits, serrations, and porosity to the vanes and fan blades.
- Performed stress analysis in ABAQUS, machined 2 aluminum fans via 5-axis CNC and 3D printed 5 OGVs.
- Reduced noise by 3 dB on both fans, and achieved distinction (70%) for dissertation.

BEng Aerospace Engineering (2:1), The University of Surrey *Oct 2015 – Jun 2018*

Formula Student Competition, Aerodynamicist

- Formula Student aerodynamicist: designed the rear wing through 28 CATIA/CFD iterations; team placed fifth overall in the UK competition. (see project here)

TECHNICAL SKILLS

- **Design and analysis:** Siemens NX, SolidWorks, Creo/Windchill, CATIA, Solid Edge, AutoCAD; tolerance-stack analysis, DFM, engineering drawings and design reviews; ABAQUS, ANSYS Mechanical/Fluent.
- **Manufacturing and testing:** Injection molding, sheet metal, CNC manufacture; PolyJet, SLA and FDM 3D printing; environmental and life testing.
- **Languages:** English (native), Mandarin (fluent), Cantonese (intermediate).
- Coding: MATLAB, Python