

PROFESSIONAL SUMMARY

Mechanical & Aerospace Engineer with 3+ years' experience in design, prototyping, tolerancing, tooling, manufacturing, root-cause analysis, environmental and life testing, and production automation. MSc in Computational Engineering & Design and BEng in Aerospace Engineering. Seeking to extend this foundation into machine learning, robotics and controls for physical systems.

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 flagship headset redesign for the US and Australian armies. Resolved 7 failure modes that caused a 25% reject rate and saved tens of thousands of pounds through design (SolidWorks) and production changes. Re-tooled 35 plastic and rubber injection molded parts.
- Developed a microphone membrane application process combining robotic adhesive deposition, custom pneumatic vacuum/pressure tooling; increased production yield from 40% to 98%.
- Designed 4 headset-respirator cables and two throat microphones using Creo/Windchill; qualified them for mass production through salt-fog, thermal and cable-bend testing.
- Redesigning a boom arm to increase its stiffness 4x; qualified it through MIL-STD-810G vibration and ingress testing.
- Designed a cyclic compression test for two helmet softliners and a rail-mount life-test fixture; redesigned a demagnetizing station for multiple microphone variants.

Manufacturing and Quality Engineer - Harlow Group Ltd., UK

May 2022 – Feb 2023

A provider of sheet metalwork and assemblies for military/commercial customers

- Planned manufacturing of sheet metal parts, and generated FAIRs (ISO9001) for aerospace/defense.
- Optimized sheet utilization and process routing for cost and energy efficiency.
- Used CMMs, height gauges and verniers to verify tolerances on aerospace components.
- Led NCR/CAR root-cause containment to improve production quality.

EDUCATION

MSc Computational Engineering and Design, University of Southampton

Jan 2021 – May 2023

Dissertation: Noise reduction of a Dyson fan (70%)

- Modified outlet guide vanes (OGV) and fan using Siemens NX by introducing serrations, porosity, and slits to the vanes and serrations to the fan blades.
- Performed ABAQUS stress analysis, machined 2 aluminum fans via 5-axis CNC and 3D printed 5 OGVs.
- Both fans reduced noise by 8 dB with aerodynamic losses.

BEng Aerospace Engineering (2:1), The University of Surrey

Oct 2015 – Jun 2018

Formula Student Competition (placed 5th in UK), Aerodynamicist

- Designed the rear wing using CATIA + SimScale/Autodesk CFD over 28 iterations (see project [here](#))

Dissertation: Electric Ducted Fan Cooling

- Optimized thermodynamic + aerodynamic cooling via duct supports using ANSYS Fluent

TECHNICAL SKILLS

- CAD: Siemens NX, SolidWorks (with Aras), Creo (with Windchill), CATIA, Solid Edge, and AutoCAD
- 3D printing: PolyJet (Stratasys), SLA (Formlabs), FDM (Bambu Lab)
- FEA and CFD: ABAQUS, ANSYS Mechanical/ICEM/Fluent/CFX, Autodesk Flow Design, SimScale
- Coding: MATLAB, Python
- Standards: ISO 9001, AS9100, MIL-STD-810G
- Languages: English (native), Mandarin (fluent), Cantonese (intermediate)