Sayyam Khurana

+44 (0) 7308024051 sayyam.khurana1@gmail.com
www.sayyamkhurana.com www.linkedin.com/in/sayyam-khurana/

PERSONAL STATEMENT

An ambitious and curious Aerospace Engineer with a passion for designing and developing high-performance products. Also, a self-proclaimed cheesecake connoisseur. Demonstrates strong analytical and communication skills, effectively dealing with uncertainty in projects. Possesses excellent problem-solving and time management abilities, ensuring successful project execution from concept to completion. Thrives under pressure and exhibits a willingness to go the extra mile to meet deadlines. Skilled in collaborating within multi-lingual teams and effectively communicating complex ideas in a simplified manner. Recognizes the importance of avoiding perfectionism and values the importance of projects being "good enough." For further evidence of skills and achievements, please visit personal website.

KEY ACHIEVEMENTS

- Founded Asian Airwise Solutions, specializing in lightweight structural design and cryogenic engineering. Designed a lightweight cryogenic LNG tank with 33% weight reduction, saving €180,000 annually per tank.
- Led a diverse team of 17 engineers across UK and India, driving efficiency improvements in Airbus Lean PLM projects.
- Published three conference papers based on extensive research in rocket recovery systems.
- Set European student altitude record with the launch of Stratos II+ sounding rocket, reaching 21.4 km from Spain in 2015.

CAREER HISTORY

Airbus: Broughton, United Kingdom – Aircraft Systems Test Engineer (November 2022 - Present)
Test engineer working on projects to automate and optimise the pneumatic and hydraulic testing of wings.

- Led the FAST Rig project, automating fuel system leak testing and achieving a significant manufacturing time-saving of 4 hours per wing.
- Developed a design specification for a new test rig, securing €500k in funding and coordinating with multiple suppliers.
- Implemented a data-collection framework for tests and data-driven decision-making logic trees, leveraging both legacy and new equipment.
- Optimized the pressure ramp-up procedure in the Hydraulic system, successfully eliminating air locks and improving system performance.

Chutes.nl: Virtual – Content Writer (November 2020 - Present)
Chutes.nl is a website for space enthusiasts with a primary focus on Entry, Descent and Landing systems.

- Authored diverse content on EDL systems, covering mission design, material selection, parachute sizing, technological advancements, strategic approaches, and more, with a focus on satellites, space planes, hypersonic aircraft, ejection seats, sounding rockets, and related topics.

ALTEN LTD: Chester, United Kingdom – Cluster Leader & Aerospace Manufacturing Engineer (October 2021 – October 2022)
Engineering consultant working as a sub-contractor for Airbus Operations (Broughton) on the Single Aisle (SA) Lean PLM project for the wing assembly.

- Managed the work-distribution, planning and delivery of the project along with leading Technical Review Meetings (TRMs) with the customer.
- Utilized Bill of Materials, Routings, Standard Operating Instructions, and Technical Drawings to create supporting documents for the transition into a modular Product Breakdown Structure, optimizing efficiency and enhancing project management processes.
- Implemented data automation using Python to improve efficiency and save 80+ man-hours.

Asian Airwise Solutions: Surat, India – Founder & Mechanical Design Engineer (May 2019 - September 2019)
Established in 2018, Asian Airwise Solutions is an engineering consultancy company specialising in lightweight structure design, recovery systems, spacecraft sub-systems and cryogenic engineering.

- Evaluated feasibility of six different concepts to reduce the weight of a double-walled cryogenic trailer leading to a significant cost reduction for the operator. Examined both structural and material changes of pressure vessels from honeycomb structures to composite overwrapped vessels.
- Reviewed technical, manufacturing, and economic feasibility and challenges of the proposed concepts and outlined potential solutions.
- Identified and documented regulatory hurdles based on ADR, EN 13530, and industrial trends, proposing strategies to address them.

Advanced Lightweight Engineering: Delft, Netherlands – Mechanical Design Engineer Intern (December 2017 - May 2018)

Advanced Lightweight Engineering Delft (ALE Delft) is an innovative company founded in 1996 that specializes in the design, development, and production of lightweight structures.

- Designed composite support structure of a novel double-walled cryogenic Liquefied Natural Gas (LNG) tank for automotive propulsion and verified it using FEM, resulting in a 20 per cent higher fuel capacity.
- Developed thermodynamic model to estimate heat leak from cryogenic tank support structures.
- Established acceptance criteria for polyurethane coating of Low8 composite LPG tanks based on statistical mechanical tests.

Delft Aerospace Rocket Engineering (DARE): Delft, Netherlands – Student Aerospace Engineer (September 2013 - December 2017)

DARE is a student rocket society with the goal of being the first student team to reach space. It performs spaceflight research and development on all fronts of rocketry and has held multiple altitude records in the past.

- Developed and fabricated an aramid supersonic parachute for Stratos III rocket and interfaced with a team of 55 students from different technical backgrounds, resulting in a partially successful launch of Stratos III.
- Led the parachute sub-system design team for Project Aether, coordinating with different sub-system departments to design, manufacture, and integrate a two-stage parachute recovery system.
- Organised wind-tunnel test campaigns to validate the design of parachutes at the Open Jet Facility, TU Delft.
- Designed, integrated, and tested feed-system for a hybrid rocket engine as part of Project Phoenix.
- Conducted failure investigations and participated in multiple design reviews.
  Designed, developed, and tested various deployment mechanisms for recovery systems.

EDUCATION

MSc Aerospace Materials: Cranfield University, Cranfield, UK (October 2019 - September 2021)

- **Key Modules**: Composite manufacturing, Aerospace materials and processing, Failure of materials and structures, Finite Element Analysis, Surface Engineering, Material selection, Functional materials.
- **Individual Research Project:** Load Introduction into Bolted UD-SMC Hybrid Composite Structures. Determined optimal location of Uni-directional tapes in hybrid composites, designed complex I-section parts, and investigated load transfer using novel insert geometries for predictable failure loads.

BSc Aerospace Engineering: Delft University of Technology, Netherlands (September 2013 - November 2017)

- **Key Modules**: Aerospace Materials and Structures, Structural Analysis and Design, Scientific Programming, Systems Engineering, Aerodynamics, Flight Dynamics, Aerospace Systems and Control Theory.

SKILLS, INTERESTS & EXTRACURRICULAR ACTIVITIES

- **Languages**: English (native), Hindi (native)
- **Computer-aided design and manufacturing (CADCAM):** *Proficient* in Catia V5, Solidworks and Edgecam; *Familiar* with Autodesk Fusion 360, Siemens NX and Catia V6
- **Finite Element Analysis (FEA):** *Proficient* in Abaqus, Hypermesh, Optistruct and Hyperview; *Familiar* with Ansys and Radioss
- **Programming Skills**: *Proficient* in Matlab, R and Python; *Familiar* with C, C++, and Java.
- **Other IT Skills:** *Proficient* in Microsoft Office, G Suite, SAP ERP and LaTeX; *Familiar* with LabVIEW.
- **Metal Manufacturing:** *Experienced* in (CNC) Turning, Milling, Sheet Metal Manufacturing and 3d Printing
- **Composite Manufacturing:** *Experienced* in Compression Moulding; *Familiar* with Prepreg lay-up and Vacuum Infusion
- **Interests:** Origami, Geopolitics, Bonsai, Arduino projects