Sam Scott

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PROFESSIONAL STATEMENT

Mechanical Engineering and Industrial Design student who thinks in extremes and builds within constraints. I start from the best possible solution, the lightest, strongest, most capable version of a product, then work through what it actually takes to manufacture that efficiently and reliably in the real world. Hands-on across the full lifecycle, CAD, prototyping, testing, and manufacture, in marine, medical, and consumer applications, with particular depth in carbon-fibre composites and high-performance structures.

TECHNICAL SKILLS

Manufacturing & Prototyping: 3D Printing (FDM, SLA, SLM, SLS), 3D Scanning, Laser Cutting, Injection Moulding, Carbon Fibre (wetlam, infusion & prepreg), CNC Machining, Milling, Turning, Welding, Vacuum Forming, Ultrasonic Welding, and other metal, wood, plastic prototyping and manufacturing techniques

Engineering Software: ANSYS (fluent, structural, thermal, ACP), Abaqus (structural, composites), Autodesk Inventor, Fusion 360, PTC Creo, SolidWorks, Siemens NX, Rhino3D, 3D Slicer (CT scans), Creaform

Design Tools & Software: Adobe Design Suite, Microsoft Office Suite, Maya, Canva, Figma, Blender

Programming Languages: MATLAB, Simulink, R, C, Python, Arduino

EDUCATION

University of Auckland, NZ *2023 – 2027*
Bachelor of Engineering (Mechanical) and Bachelor of Design
- Mechanics of Materials, Maths Modelling, Design & Manufacture, Dynamics, Thermofluids, Control Systems, Design Methods & Processes, Sustainable Design, Future of Design, Aerostructures & Mechanisms

King's College Auckland, NZ *2018 – 2022*
Cambridge International Exams
- A Level courses in Mathematics, English Literature, Physics, Chemistry, Technology and Design

EXPERIENCE

Composite Developments *NOV 2025 - Current*
Designer and Mechanical Engineer
- Designed ultralight carbon fibre products including tents and hiking equipment with a focus on stiffness-to-weight optimisation and manufacturability
- Conducted material testing (tear strength, waterproofing, abrasion resistance) to validate performance under real-world loading conditions
- Contributed to multiple products progressing toward commercial release

Navico *NOV 2025 – FEB 2026*
Mechanical Design Intern
- Developed and prototyped concepts for next-generation marine display systems and enclosures
- Integrated sensors and embedded systems using Arduino and Python to support functional prototyping and testing
- Collaborated with industrial design team, hardware, software and OS teams to improve usability, and product performance

University of Auckland *AUG 2025 – NOV 2025*
Research Assistant
- Designed a 900 g freestanding ultralight tent for extreme environmental conditions (100 km/h winds, heavy rain and snow loading)
- Performed material selection and experimental testing to optimise strength, durability, and weight trade-offs
- Applied FEA and CFD to validate structural behaviour and reduce material usage while maintaining stability

Adept Medical *NOV 2024 – OCT 2025*
Engineering Design Intern
- Designed medical devices from concept through to clinical validation and trial stages
- Led development of an ergonomic arm support system that reduced nurse workload in hospital environments
- Supported full product lifecycle including prototyping, testing, and manufacturing (injection moulding, composites)

ParkHelp *JUN 2024 – SEP 2024*
Mechanical Design Intern
- Redesigned parking sensor housing to enable non-invasive replacement without excavation
- Improved system maintainability and reduced long-term operational costs through design simplification
- Supported design-for-manufacture improvements across legacy hardware systems

Absolute Plastics *NOV 2023 – JUN 2024*

Mechanical Engineering Intern

- Operated and optimised injection moulding processes to improve production efficiency and reduce cycle time
- Performed machine and tooling maintenance, including rapid changeovers and fault diagnosis
- Designed jigs and assembly improvements, increasing production efficiency by ~50%

NOTABLE PROJECTS *All Projects - samscott.framer.website/*

Advanced Foiling Team/Foil Yacht Innovation - *University Club – Executive* *AUG 2025 – Current*

- Co-founded and help lead a 25-person team designing and building two full carbon foiling International Moths for the SuMoth Challenge in Italy 2027
- Driving a sustainable, high-performance design approach combining lightweight composite structures, FEA-informed design, and iterative prototyping
- Hands-on experience with prepreg carbon fibre, wet layup/infusion, CNC-machined moulds, 3D scanning, control systems and various other awesome manufacturing methods

LJ's Racing - *New Zealand Representative Team - Team Captain / Skipper* *Jan 2025 - Current*

- Captain a New Zealand representative team competing on the World Match Racing Tour, leading crew selection, training, and on-water tactics
- Raise $40,000 in sponsorship and backing to fund international campaign costs, securing and managing sponsor relationships
- Represented 40+ sailors in a formal fairness-in-sport case, achieving a successful outcome for the group.

KOKAKO (Human Powered Aircraft) - *University Club -Transmissions Lead* *MAR 2024 – JAN 2026*

- UoA Aeronautics Club is designing and building a Human Powered Aircraft from the ground up.
- Entire aircraft will be <40kg, have a 30m wingspan, made from carbon fibre, foam and mylar.
- The transmissions team of 10, designs and builds the drive train through to the prop hub.

Premium Economy Design – *Contract* *JAN 2025 – MAR 2026*

- Worked with a designer to create an innovative new premium economy product concept for Air New Zealand with lie flat beds
- Used creative solutions and mechanical design to maximise useable space
- Completed structural analysis and improved aesthetics to suit the modern 787 cabins

EcoRoute – *Personal Project for Lexus Design Awards* *JUL 2024 – NOV 2024*

- To solve the huge issue of batteries being harmful to manufacture and dispose of.
- Solution for buses which allows them to be almost instantly wirelessly charged, that uses recyclable and sustainable super capacitors, allowing for more efficient point to point transport as well as accurate and reliable arrival times.

NOTABLE ACHIEVEMENTS

UoA Design First in Course

Sir Peter Blake Leadership Award

King's College School Prize for Technology and Design

King's College Sportsman of the Year

King's College Sacristan & Prefect

King's College Cycling & Sailing Captain

UoA Blues Award

Aquabots NZ Championships Runner Up

Duke of Edinburgh Gold, Silver, Bronze

4x NZ Sailing National Champion

2x Sailing World Championship Representation

12x Sailing & Sport Leadership Awards

OTHER PROFESSIONAL EXPERIENCE

Kings College - Cycling Head Coach – *2025-Current*

Kings College – Sailing Head Coach - *2023–25*

Murray's Bay Sailing Club – Coach - *2020-25*

Private Tutor - *2022-24*

Royal New Zealand Yacht Squadron - Coach - *2023-25*

Royal Akarana Yacht Club - Coach - *2023-24*

Point Chevalier Sailing Club - Coach - *2020-23*

Serving Spoons - Waiter - *2020-21*

VOLUNTEER EXPERIENCE

Murray's Bay Sailing Club - Umpire - *2020 – 25*

Otahuhu Town Hall - Tutor - *2019 - 22*

King's College - House Tutor - *2021 - 22*

King's College Chapel - Sacristan – *2022*

Acacia Cove Retirement Village - Labourer - *2021*

Local Otahuhu Schools - Tutor - *2020*

Department of Conservation - Trap Layer - *2017 - 2019*