

JAYE BARRINGTON

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PERSONAL STATEMENT

I'm a Mechanical and Design Engineer with strong expertise in CAD and advanced manufacturing, applying these skills to real-world engineering challenges. I've delivered innovative solutions such as laser-induced nitinol shaping, custom G-code for nanofibre production, and the creation of accurate 3D models through optical/laser scanning.

Currently, I work as an engineering technician in biomedical imaging at King's College London, supporting over 100 academics across 10+ labs/workshops. In this role, I combine design, manufacturing, and technical training with compliance and resource management, ensuring safe and efficient operations.

Beyond academia, I've gained diverse hands-on experience – from motorcycle repair to electronics servicing with Lime Bikes – and run a small business providing bespoke 3D printing and engineering design consultancy. I'm now looking to apply my skills in a progressive company where I can contribute to innovative design while further honing my expertise.

KEY HIGHLIGHTS

- **CAD & Manufacturing Expertise** - CNC machining, 3D printing, moulding, laser cutting, micro-laser welding.
- **Innovative Project Delivery** - laser-induced nitinol shaping, custom G-code nanofibre production, VTOL UAV (fixed-wing with tilt rotors, final year individual university project).
- **Training & Supervision** - delivered inductions and advanced instruction in 3D scanning, tensile testing, soldering, milling, and lathe machining.

EMPLOYMENT EXPERIENCE

Engineering Technician (Biomedical) - King's College London, London | Mar 2024 - Present

- Specialist technician supporting biomedical research through CAD-driven design, advanced manufacturing, and technical training, while ensuring safe and efficient workshop operations.
- Applied advanced CAD and manufacturing techniques (CNC machining, 3D printing, silicone/resin moulding, laser cutting, micro-laser welding, manual machining) to design and produce biomedical phantoms for imaging research.
- Developed innovative methods:
 - Used laser cutting to locally heat nitinol wire, achieving precise curvature without mechanical force.
 - Wrote custom G-code to produce 80-micron PVA nanofibres using an FDM 3D printer.
- Produced accurate 3D digital models from optical/laser scanning, integrated with CAD for prototyping and reverse engineering.
- Delivered technical training and supervision, from basic 3D printer inductions to advanced tensile testing, soldering, 3D scanning, milling, and lathe machining.
- Oversaw technical operations, compliance, and resource management, including equipment upkeep, consumables, PPE, hazardous waste, SOPs, and safe working practices across workshops and laboratories.

Senior Technician (Fleet Repair)- (Lime E-Bike) Bermondsey, London | August 2023 - March 2024

- Diagnosed and repaired e-bikes, from mechanical faults to electronics and hardware.
- Performed quality control checks across London fleet and mentored junior technicians.
- Used digital inventory systems to manage stock and track repairs.

Mechanical Technician - Halfords BikeHut, Croydon, London | July 2019 - May 2022

- Gold-certified technician for complex bicycle, e-bike, and e-scooter repairs.
- Built and serviced a wide range of models, including hydraulic MTBs and e-cargo bikes.

Mechanic Assistant - AllBikes Purley, London | March 2016 - July 2016

- Assisted with motorcycle servicing (50cc-1200cc), carrying out basic maintenance.

PROJECTS

VTOL UAV Fixed-Wing with Tilt Rotors - Final Year Individual University Project - Kingston University:

- Designed and developed a fixed-wing VTOL UAV with tilt rotors, applying CAD, aerodynamics, electronics, and structural analysis.
- Created servo-actuated transition controls for vertical take-off and forward flight.
- Ran CFD simulations to optimise aerodynamic performance.
- Conducted structural wing tests to minimise resonance and deflection.
- Delivered a functional proof-of-concept aircraft on time using engineering project management principles.

Autonomous Pipe-Climbing Robot - iMechE Robotics Competition - Kingston University:

- Led CAD design, 3D printing, and electronics in a team manufacturing an autonomous climbing robot for pipe inspection
- Overcame challenges through innovation, adopting lightweight bio-inspired designs such as honeycomb structures.

FirstPersonView Multi rotor and fixed wing drones - Personal:

- Designed and built custom FPV drones, integrated RC electronics and FPV video transmission.
- Integrated 3D-printed components and configured flight controllers and ESCs.
- Developing a long-range GPS drone with focus on efficiency and extended flight time.

6 D.O.F Robotic Arm - Personal:

- Designed and fabricated robotic arm components using CAD and additive manufacturing.
- Developing ROS-based control, with planned integration of vision systems and local AI for autonomy.
- Project focused on strengthening mechatronics, programming, and system integration skills.

QUALIFICATIONS

Kingston University - BEng (Hons) Mechanical Engineering (2:1), 2020

Skills

- CAD & Simulation:** Fusion 360, SolidWorks, CFD/FEA, MATLAB, ANSYS.
- Manufacturing & Prototyping:** CNC machining, 3D printing, 3D optical scanning (reverse engineering), silicone/resin moulding, laser cutting, micro-laser welding.
- Programming & Electronics:** Python, C++, MATLAB/Simulink, control systems, ROS (developing proficiency).
- Other:** Microsoft Office Suite, IT systems (Windows/Mac/Linux).

PERSONAL INTERESTS AND EXTRACURRICULAR ACTIVITIES:

- Provide consultancy to clients, including prototyping and manufacturing support.
- BMFA member (British Model Flying Association).
- Mountain biking (BHF London to Brighton Off-road Event 2019).
- Motorcycling.