

JOSHUA KIFF

Robotics & Mechatronics Engineer

Mechanical Design · Embedded Systems · Software

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SUMMARY

Robotics and mechatronics engineer with 10+ years across robotic hardware, mechanical design, embedded systems and production software. Seven years at Q-Bot, an award-winning built-environment robotics startup, progressing from installation technician to technical lead of a 5-axis robotic printing system. Co-founder and lead engineer of VARK Technologies, a patent-pending robotic wheel-module platform shortlisted for the Rolls-Royce Aerospace Open Innovation Challenge 2026. Owns work from concept through CAD, prototype and certification to shipped product, with production mobile software used by 250,000+ active users.

EXPERIENCE

Co-Founder & Lead Engineer | VARK Technologies

2025 - Present

- Designed a patent-pending low-profile robotic wheel-module platform that converts passive structures into AGVs; provisional patent filed covering the wheel module and fleet coordination.
- Shortlisted for the Rolls-Royce Aerospace Open Innovation Challenge 2026 (modular engine handling for MRO); authored the technical proposal, pitch deck and video, and led direct engagement with Rolls-Royce engineering stakeholders.
- Designed the multi-module AGV architecture across mechanical, embedded and software layers, including BLDC drive control, encoders, motion control and communication between distributed controllers.

Full Stack Developer | Florence, London

2022 - Oct 2025

- Owned iOS and Android release cycles for a platform with 250,000+ active users, from feature development through deployment and monitoring.
- Also sole developer of Drooli, a commercial Flutter app for a Shopify retailer, live on Google Play (JJKSoftware, 2025 - Present).

Installation Technician → Robotics Engineer → Design Engineer | Q-Bot Ltd, London

2015 - 2022

- Promoted three times over seven years at an award-winning robotics startup, from site technician to technical lead.
- Technical lead for a 5-axis robotic 3D printing and material-manipulation system that mapped its surroundings, localised itself, and generated tool paths to apply material onto vertical surfaces - removing repetitive, dangerous manual tasks.
- Designed pneumatic high-pressure polyurethane spray tooling; personally carried out and passed BBA certification testing for a new insulation method, enabling company-wide quality assurance.
- Diagnosed and rebuilt robotic modules in the field; designed test rigs and jigs, and machined precision parts to improve equipment reliability.
- Built the supporting software: a tablet manufacturing-control app commanding machine sequences, and a cross-platform Flutter training app that cut partner-onboarding time.

SELECTED PERSONAL BUILDS

Tennis ball launcher: ultra-compact padel/tennis ball machine; BLDC launch system, ESP32 control, BLE training app.

CNC whiteboard plotter: 3-axis gantry over a 1.5 m x 1.5 m whiteboard with automatic tool changer for multi-colour drawing.

Milling machine CNC conversion: motorised a manual mill with controller and DRO to cut aluminium and brass.

Self-designed 3D printer: multiple iterations, latest with a particle-filtering enclosure.

Warehouse simulation: basic FlexSim modelling of warehouse flows, AGV movement and operational scenarios.

SKILLS

CAD & mechanical: SolidWorks · Fusion 360 · Autodesk Inventor · Onshape · CAM · 3D printing · CNC milling · Manual machining

Embedded & motion control: ESP32 · Embedded C++ · BLDC motors · ODrive · Motor control · Motion control · Encoders · Sensors · BLE

Software, cloud & simulation: Flutter · Dart · Ruby · C++ · Firebase · REST APIs · Heroku · AWS S3 · Mixpanel · FlexSim (basic) · OpenClaw

Mechatronics: Electrical system design · Pneumatics · Hardware debugging · Prototyping · Test rigs & jigs

EDUCATION

BTEC Level 3 Extended Diploma in Engineering (D*D*D*) - South Essex College

2010 - 2012