# Nagim Ibragimov

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## EDUCATION

**King's College London** 2025 – 2026 (Current)
*MSc Robotics* London, UK

**King's College London** 2022 – 2025
*BEng Electronic & Electrical Engineering* London, UK

## EXPERIENCE

**Hanson Robotics (Sophia the Robot)** June 2024 – August 2024
*Robotics / Software Engineering Intern* Hong Kong (Hybrid/On-site)

- Built and optimised Sophias eye-tracking system using **Python, ROS, and Linux** for robust human tracking.
- Added predictive tracking using body-camera data and distance estimation to stabilise gaze under motion and occlusion.

**King's College London** September 2024 – April 2025
*Research Assistant (Automated Human Behaviour in Dyadic Interactions)* London, UK

- Triangulated **3D hand keypoints** from multi-camera input to capture precise hand motion in 3D space.
- Linked hands to individuals using pose landmarks for consistent identity tracking across views.
- Implemented a way with **Python, MediaPipe, and OpenCV**; emphasised reproducibility and robust preprocessing.

## PROJECTS

**FPGA Arithmetic Logic Unit (ALU) — Structural VHDL (Vivado)** January 2025 – April 2025

- Designed and implemented a **6-bit ALU** in structural VHDL; deployed and validated on a Basys3 FPGA.
- Verified functionality through simulation and analysed resource usage/timing using Vivado toolchain.

**Machine Learning: Logistic Regression & Neural Networks (from Scratch)** 2025

- Implemented logistic regression with gradient descent and a two-layer neural network with ReLU and sigmoid activations **from scratch** using NumPy.
- Derived and implemented cross-entropy loss and full backpropagation for end-to-end model training and evaluation.

**Biomimetic Mars Rover & Bio-inspired Gripper (Team Project)** September 2023 – January 2024

- Contributed to rover control-system development and helped design a bio-inspired gripper for improved grasping performance.
- Worked with cross-functional teammates to support build, integration, and test iterations under schedule constraints.

## SKILLS

**Programming & Software:** C, Python, MATLAB, Simulink, ROS, Git, Linux

**Robotics & AI:** Robot Kinematics, Motion Planning, Computer Vision, Machine Learning, Optimisation, MuJoCo Simulation, Sensor Systems

**Hardware & Embedded Systems:** FPGA Development, Vivado (VHDL), Digital Logic Design, Electronic Circuits, Integrated Circuits, Embedded Systems

**Design & Engineering Tools:** Fusion 360, LTspice/Scopy, LaTeX/Overleaf, flow5, openVSP