



Building the Most Likeable Humanoid

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The Problem: Technical Capability Over Desirability

Elo is the first autonomous wheeled humanoid built for under £1,500, with specs that match top of the line robots. Built with a "companion first, tool second" mentality, Wheeled Elo will be the most approachable robot on the market, with its wheeled form set for completion by the end of May 2026 and its legged by June 2027.

Currently, the humanoid robotics market prioritises technical capability over human desirability. Manufacturers obsess over operational metrics while putting little effort into creating machines people actually want to be around. Worse, the robots that do exist cost tens or hundreds of thousands of pounds, locking out ordinary households and entire nations from the benefits of physical automation. Elo changes both. A robot people want in their home, at a price point that makes it possible.

Low cost generalized physical automation is not just a consumer product play. It is infrastructure. Nations that can put capable robots into homes, small businesses, and communities at scale will unlock productivity gains that were previously reserved for those who could afford six figure machines. Elo is how that access gets democratized.

Traction & Validation

Since launching in December, our hardware has secured real-world adoption and academic recognition across two core components:

- **OpenBase3:** Our holonomic base, built from upcycled hoverboard motors with custom omnidirectional wheels, achieves an unprecedented torque to price ratio. It is in active use by a New York robotics startup, Starlife, and we are co-authoring a paper with the HCI lab at Carnegie Mellon University using the wheels.
- **GEM Arm:** Our robotic arm, the Good Enough Manipulator, is being featured in an upcoming hardware research paper at UCL as an affordable upgrade to the popular SO100 arm. It lifts payloads over 400 grams, costs under £375 per arm, and offers near human-like reach. Both components are open source.

What We're Building

Wheeled Elo is our flagship platform and the direct focus of this grant. A fully autonomous humanoid built for under £1,500, it integrates our validated OpenBase3 base and GEM arms with expressive personality systems and autonomous behaviour. Target completion: end of May 2026.

Active workstreams:

- **Compute and Expressive Systems:** Custom PCB matrix of NeoPixel LEDs and a Raspberry Pi CM5 based SBC driving facial micro-expressions from real-time voice input.
- **Teleoperation and Base Integration:** WebXR teleoperation platform via Cloudflare's real-time SDK, integrated with the Zappar Zapbox for low-cost immersive control, alongside SimpleFOC based motor boards for the base.
- **Physical Prototyping:** Manufacturing shells from the latest design renders and finalising full hardware integration.

LeBiped is our medium-term open source bipedal platform, designed as a reliable kit for teaching bipedal learning policies and closing the sim to real gap. It is the pathway through which Elo eventually transitions to legged locomotion reliably and not suffer the same pitfalls as many humanoid companies have faced that rushed into legged development.

Team & Differentiators

What sets Elo apart starts with how our team of 12 thinks. We are a collective spanning industrial design, full stack robotics development, embedded systems, software engineering, and visual arts, strategically assembled and led by a design-first philosophy. Most robotics teams engineer a machine and then figure out how to make it appealing. We start with the character, the personality, and the emotional response we want to provoke, then engineer backwards from there. Every member is not just technically gifted in their discipline but shares a deep passion for making Elo London's flagship humanoid and a global benchmark in likeability.

We actively leverage generative AI tools such as Vizcom to turn rough sketches into production ready visuals, meaning creativity is never limited by the ability to render it. This lets us compress design cycles that would traditionally take weeks into days, iterating on form, expression, and proportion at a pace most hardware teams cannot match.

We are also building the infrastructure to scale. Alongside Elo, we are developing internal automation systems to identify and recruit exceptional early-career talent across engineering and design, building what we believe will become a core pipeline for the UK robotics industry over the next decade.

Use of Funds

Our entire team operates on a zero salary basis, meaning 100% of this grant goes directly toward building Wheeled Elo and its supporting R&D:

- **Manufacturing:** PCB manufacturing and assembly for compute and expressive systems.
- **Hardware Sourcing:** Motors (including Feetech servos) for three complete prototypes, and JIECANG industrial lifting columns for the vertical mechanism.
- **R&D Expansion:** NVIDIA SBC development and XR headset testing for the teleoperation software.
- **Compute:** Renting GPUs for training the model and deploying our robots in simulation
- **Workspace:** Securing a dedicated collaborative workspace to accelerate development cycles.