# Bhavy Metakar

Co-Founder & CTO | Arkwright Engineering Scholar | IET Scholar | TDI National Final Winner
LinkedIn | Engineering Portfolio | Email | 07368395718

## EDUCATION

**University College London**

*Master of Engineering (MEng)*

- Relevant modules: How to Change the World, Robotics, Engineering Challenges
- Societies: President of Fleming Society leading a team of 20+ members and organising events for 750+ students, Cricket Society, Institute of Making, UCL Racing

## Projects

**Hippos Exoskeleton Limited: Smart Adaptive Knee Brace**

*Co-Founder and CTO*                                                                              *02/2024 - Present*

- Raised $600,000+ from angel investors and venture capitalists.
- Patented and developed the world's first smart adaptive knee brace to prevent 80% of all knee injuries.
- Investigated machine learning and numerical methods to predict future data to predict knee injuries.

**AI Autonomous Tracking Drone**

*Independent Project*                                                                               *03/2023 - 05/2023*

- Developed an autonomous drone using AI face tracking to carry supplies in rescue situations.
- The prototype was 5x cheaper than other commercial options and could carry 2x more payload.
- Achieved this by programming a bespoke flight controller and using ESPSense camera for machine vision.

**TeensInAI: Mapedemic, an AI Covid-19 case predictor**

*Project Manager*                                                                                   *01/2020 - 02/2020*

- Coordinated Software Engineers to develop an app to predict future Covid-19 to indicate PPE demand.
- Predicted future Covid-19 cases and PPE demand within a 15% uncertainty and displayed on a heat map.
- Employed web scraping in Python to obtain live data from government websites, and used Tensorflow alongside Google Cloud's API to train a machine-learning model to predict future Covid-19 cases.

**Uplands Rehabilitation Centre: Bionic Arm Brace and Rehabilitation Glove**

*Independent Project*                                                                               *09/2022 - 04/2023*

- Invented a bionic arm brace and rehabilitation glove for patients with hand mobility issues due to strokes.
- Enabled over 40 stroke patients to successfully move their arm and hand, speeding up recovery time.
- Implemented EMG sensors to measure patients' brain signals, actuated by the arm brace and glove.

**Leonardo: Autonomous Utility Robot**

*Project Manager*                                                                                   *10/2021 - 06/2022*

- Led a team of 6 Engineers to prototype an autonomous payload-carrying utility robot for soldiers in the field.
- Designed to carry an additional 10kg of payload and autonomously follow a soldier through rough terrain.
- This was achieved using IR sensors for accurate short-range tracking and manufacturing bespoke tank tracks.

**Cardboard 3D Printer**

*Independent Project*                                                                               *01/2022 - 06/2022*

- Designed a 3D printer made out of cardboard by crafting a Prusa-style frame.
- Prototyped a functional 3D printer 3x cheaper than commercial options.
- Developed the 3D printer by calibrating open-source firmware and tuning PID control.

## LEADERSHIP EXPERIENCE

**UCL Fleming Society**

*President*                                                                                         *07/2024 - Present*

- Led a team of 20+ committee members to host events, technical workshops and industry collaborations for 750+ students.

**Combined Cadet Force**

*Sergeant Major*                                                                                    *01/2019 - 07/2023*

- Led 80 younger Army Cadets on camps by ensuring their safety, delivering training and organising weekly parade nights. Managed a team to come up with and deliver training lessons outlined by various qualifications.

## Technical Skills

- CAD/CAM software: Fusion 360, SolidWorks, Onshape, 2D Design, Cura, Slic3r
- Practical Skills: Metal Working, Precision Machining, Soldering, PCB Design
- Programming Languages: Python, C, C++, MatLab, HTML, CSS