

# Prithvish Ganguly

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## EDUCATION

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### University of California, Berkeley

Berkeley, CA

*Master of Engineering (MEng), Bioengineering - GPA: 3.9*

*Expected May 2026*

- **Relevant Coursework:** Medical Imaging; Development Engineering; Soft Robotics; Product Management
- **Capstone Research:** Magnetic Particle Imaging (MPI)

### King's College London

London, UK

*Bachelor of Engineering (BEng) Biomedical Engineering, First Class Honours*

*May 2025*

- **Top 10% of cohort** | GPA 4.0 | Thesis: 82%
- **Relevant Coursework:** Medical Imaging; Mechatronics; Machine Learning; Signals & Image Processing

## EXPERIENCE

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### Connolly Lab, University of California, Berkeley

Berkeley, CA

*Research Engineer | Magnetic Particle Imaging (MPI) Capstone Project*

*Aug 2025 – Present*

- Engineer and prototype microfluidic purification systems for magnetic particle imaging (MPI) tracers, targeting greater than **10× resolution** boost through formation and separation of SFMIO chains.
- Design and iterate device architectures in **Fusion 360 and SolidWorks**, integrating micro-channels and magnetic assemblies to optimize chain-formation dynamics.
- Conduct nanoparticle characterization using **TEM, DLS, and AWR**-based PSF and analysis to evaluate tracer uniformity and signal fidelity.
- Collaborated with PhD researchers and **Magnetic Insight** engineers to prototype next-generation MPI purification systems.

### Pickering Lab, University of California, Berkeley & Mangrove Water

Berkeley, CA

*Development Engineer*

*Aug 2025 – Present*

- Co-develop a **universal hand-pump adapter** enabling deployment of the TuriTap inline chlorination system in rural water networks across East Africa and South Asia.
- Model and validate adapter and mounting system designs through **CAD, CFD simulation**, and rapid prototyping.
- **Optimize flow pathways** to eliminate overflow from pipe-diameter transitions, improving chlorination uniformity and reliability.
- Cut installation time by **90%** using modular, tool-free connector design.
- Partnered with Mangrove Water engineers to scale field deployment, improving rural water-system reliability.

### Nanyang Technological University

Singapore

*Automation Engineering Intern*

*June 2025 – Sept 2025*

- Redesigned and modularized a **\$200 k** robotic spin-coating (“*spinbot*”) system, integrating motion-control hardware and modular I/O to eliminate a **6-month** fabrication backlog.
- Implemented an RL leader-follower algorithm (Python, PyTorch, ROS) for tilt-and-pour deposition, boosting throughput to **243 devices in 3 hrs** (vs. 1 in 3 hrs manual).
- Selected for NTU fellowship (**top 1 % of 4 600 applicants**).

### St Thomas' Hospital, King's College London

London, UK

*R&D Engineering Intern*

*June 2024 – Oct 2024*

- Designed and fabricated a portable **C-arm simulator** (Fusion 360, 3D printing, laser-cut acrylic), reducing footprint by **62.8 %**.
- Developed a **Python/OpenCV imaging pipeline** (grayscale, ROI, Gaussian filtering) to simulate fluoroscopy images **without radiation**.
- Built an Arduino Mega control system (steppers, joystick/buttons, EEPROM presets) with custom shields and JST enclosures for reliability.
- **Validated simulator accuracy** against clinical fluoroscopy for medical-training use.

## TECHNICAL SKILLS

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**Design & Mechatronics:** Fusion 360, SolidWorks, 3D printing (FDM, SLA), laser cutting, electromechanical design, control systems (PID)

**Electronics:** Microcontrollers (Arduino & ESP), sensors and integration, motor drivers, wiring and soldering, data logging

**Computation & Imaging:** Python, MATLAB, C++, Reinforcement Learning, OpenCV, numerical simulation, medical image analysis and segmentation (3D Slicer, ITK-SNAP), MuJoCo simulation.