

Funded PhD in Robot Learning

2027 INTAKE • FULLY FUNDED

APPLY BY 27 OCT 2026

Join **CAPE Robotics Lab** at the University of Cape Town and help build robots for a world without e-waste.

R200,000

per year, for up to 3 years

Plus equipment allowance, conference travel and international mobility funding, through the NRF Presidential PhD Programme (PPP) in Digital Transformation.

What you could work on

Our goal is to develop robots that learn physical skills for real-world impact, with applications in environmental sustainability, from e-waste recovery and recycling to repair and remanufacturing. To that end, we are recruiting PhD students in the following topics:



01 Task and Motion Planning (TAMP) for Robotic Disassembly

Planning disassembly sequences for products whose condition, variant or design is unknown in advance.



02 Deformable Linear Object Manipulation

Perceiving, untangling and routing cables and wires, such as the cable bundles inside old computer cases.



03 Sim-to-Real Transfer & Synthetic Data for Robot Learning

Generative augmentation of robot demonstrations (e.g., NVIDIA Cosmos Transfer) to scale and diversify training data.



04 Reinforcement Learning for Contact-Rich Manipulation

Online RL and fine-tuning so policies improve on real hardware: unscrewing, unclipping, connector removal.



05 Semantic Reasoning & Long-Horizon Task Planning

Grounding vision-language models in robot actions with chain-of-thought, behaviour trees and hierarchical planning.



06 Execution Monitoring & Failure Recovery

Perception-based detection of task success and failure for deployed VLA policies, triggering retries or replanning.



07 Metric 3D Perception for Manipulation

Learned depth and 3D scene understanding accurate at real-world scale. Disassembly needs millimetres, not centimetres.



08 Your Own Proposal

A complementary topic aligned with the lab's research, such as tactile sensing, inspection or human-robot collaboration.

You'll thrive here if you have

- Strong programming skills
- A background in robotics, computer vision, reinforcement learning, or electrical or mechanical engineering
- Excitement about embodied AI with real-world, sustainable impact

Eligibility (PPP rules)

- Master's in CS, IS or a related field with at least 65%, completed by December 2026
- Based full-time in Cape Town for the fellowship
- No employment over 12 hours per week; not on sabbatical
- Study visa required for non-South Africans

How to apply

1

Apply to CAPE Robotics Lab

By 27 Oct 2026 (AoE), via the QR code.

2

Apply to UCT: PhD in CS

By 1 Nov 2026. Required, do it in parallel.

3

CAPE Robotics Lab Interview

Shortlisted applicants only.

4

Endorsement

Selected candidates are endorsed for the PPP fellowship round, late 2026.

[QR CODE]

Scan to apply
[APPLICATION LINK]