

Haitao Gao

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Education

University of New South Wales, Doctor of Philosophy (medical robotics) Jan 2026 – Jun 2029
Sydney, Australia

- **Full Scholarship:** UNSW TFS Scholarship
- **Research Topic:** Learning-based kinematics and motion planning for concentric tube robots, including the development of simulation environments for surgical scenarios to enable imitation learning.

University of New South Wales, Master of Artificial Intelligence (focus on Statistics) Feb 2024 – Dec 2025
Sydney, Australia

- **WAM:** 87/100 (**High Distinction**)
- **High Distinction Coursework:** Time Series Analysis (90), Bayesian Inference (90), Machine Learning & Data Mining (90), Extended Artificial Intelligence (93), Computer Vision (92)

Hangzhou Dianzi University, Bachelor of Engineering (Electrical) Sept 2019 – Jun 2023
Hangzhou, China

- **GPA:** 3.5/4.0
- **High Distinction Coursework:** Advanced Mathematics A2 (92), Complex Analysis and Integral Transformation (92), Big Data Analysis (92), Information Theory and Coding (87), Data Communication and Computer Network (89)

Selected Works

TRANSFERABLE DEEP REINFORCEMENT LEARNING WITH EDGE-CONTOUR-DEPTH FUSION FOR AUTONOMOUS WIRELESS CAPSULE ENDOSCOPY NAVIGATION Advanced Science
[\[Under Review\]](#)

PERCOLATION CRITICAL PROBABILITY OF APERIODIC SMITH HAT TILE($1, \sqrt{3}$) Physical Review E
I am the **first person in the world** who discovered the percolation critical probability for Smith hat geometry. [\[Under Review\]](#)

ANATOMICAL LANDMARK-GUIDED DEEP REINFORCEMENT LEARNING FOR AUTONOMOUS GASTRIC NAVIGATION ICRA Workshop (Medical Robot) 2026
[Link](#)

BAYESIAN MIXTURE MODEL OF R-PARETO PROCESS FOR EXTREME PRECIPITATION Graduate Thesis
WAM: 90/100; Studied **Extreme Value Theory** [Link](#)

Teaching and Tutoring

COMP9414 Artificial Intelligence UNSW
T3 2025, T1 2026, T2 2026

COMP9517 Computer Vision UNSW
T1 2025, T3 2025

Leadership

President, Basketball Association Hangzhou Dianzi University, China Sep 2020 – Sep 2022

- Managed scheduling to optimize tournament structure, ensuring fair distribution of matches for all teams.
- Secured sponsorship from a beverage company to support competition operations and event funding.