

PhD Positions in Turbulence and Generative Modeling

Department of Mechanical Engineering

About the Group

Our research explores the **two-way interaction between turbulence and modern AI**. We use advanced AI methods to develop new ways of generating, reconstructing, and exploring turbulent flows, while using turbulence as a rigorous scientific testbed to evaluate, understand, and advance AI methods.

Dr. Tianyi Li is an Assistant Professor in the Department of Mechanical Engineering at The Hong Kong Polytechnic University (PolyU; QS 2027: **#50**). Recent work by the PI has been published or accepted in leading journals including *Nature Machine Intelligence*, *Nature Communications*, and *Journal of Fluid Mechanics*.

Research Opportunities

We are recruiting **1–2 PhD students** to study generative modeling of turbulent flows.

Potential research directions include:

- **Learning from limited or imperfect observations**, focusing on recoverability and practical measurements;
- **Reliable generative modeling of turbulence**, focusing on physical fidelity, robustness, and generalization;
- **Generative modeling of particle-based, coupled particle–field, and other multimodal turbulent systems**.

Students are also encouraged to develop new scientific questions and methodological directions that emerge naturally from these themes.

Who We Are Looking For

We welcome applicants with backgrounds in fluid mechanics, mechanical or aerospace engineering, applied mathematics, computational science, machine learning, or related fields.

Successful candidates are expected to have:

- **Strong mathematical and physical foundations**, together with solid programming and numerical skills.

We particularly value curiosity, the ability to learn independently, and persistence.

Experience in turbulence and fluid mechanics, computational fluid dynamics and high-performance computing, machine learning, particularly generative modeling, or experimental and measurement data analysis is advantageous but not required.

Funding and Admission

Positions are available for **2027 entry**, with January, May, and September entry periods subject to the PolyU admission schedule. For **January 2027 entry**, the application deadline is 30 September 2026.

Full-time PhD students may receive an annual stipend of approximately HK\$230,000–344,000, depending on the fellowship or scholarship scheme, including competitive fellowships for outstanding candidates ([details here](#)).

Applicants should satisfy the PolyU research postgraduate admission requirements ([details here](#)). Applicants without a degree for which English was the language of instruction at a recognised university are required to have IELTS Academic 6.5 or TOEFL iBT 80.

How to Apply

Prospective applicants are encouraged to contact Dr. Tianyi Li informally.

Please email tian-yi.li@polyu.edu.hk with:

- a CV;
- academic transcripts; and
- a brief description of your research background and interests (in the email body is sufficient).

Suitable candidates will be contacted for further discussion.

Formal applications should follow the PolyU research postgraduate application requirements ([details here](#)).