Tony RuiKang OuYang

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Current Position

Machine Learning Group @ University of Cambridge — *Cambridge, UK*
Research Assistant in Probabilistic Machine Learning — *Oct 2024 – present*
Supervisor: Prof. José Miguel Hernández-Lobato

- Generative Models, Neural Sampler, and Boltzmann Generator

Education

University of Cambridge — *Cambridge, UK*
DPhil in Advanced Machine Learning — *Oct 2025 – June 2028*

- Supervisor Prof. José Miguel Hernández-Lobato
- **Fully-funded** by EPSRC DLA Studentship Award

University of Cambridge — *Cambridge, UK*
MPhil in Machine Learning and Machine Intelligence — *Sep 2023 – Aug 2024*

- Graduate with **Distinction** (**Grade: 77%, Top 20%**)
- Course Advisor & Thesis Supervisor: Prof. José Miguel Hernández-Lobato
- Thesis: Energy-based Neural Sampler for Boltzmann Distribution (**Grade: 77.5%**)

University of Oxford — *Oxford, UK*
Visiting Student in Mathematics and Statistics — *Jan 2022 – Jul 2022*

- Supervisor: Prof. Gesine Reinert and Prof. Geoff Nicholls
- Fully funded by Harbin Institute of Technology, Shenzhen

Harbin Institute of Technology, shenzhen — *Shenzhen, CN*
BEng in Data Science — *Sep 2019 – Jun 2023*

- Graduate with **Distinction** (**Grade: 90%, Top 10%**)
- Thesis Supervisor: Yi Zhao
- Thesis: Implicit Local Node Embedding Synchronisation for Graph Autoencoders (**Grade: 90%**)

Experiences

The Alan Turing Institute — *London, UK*
Research Assistant — *Apr. 2022 - Jul. 2022*
Supervisor: Prof. Gesine Reinert

- Research about scalable Graph Neural Network and Federated Learning for data privacy

MolSS reading group — *London, UK*
Lead Organiser — *May. 2025 - present*

- A community for machine learning in molecular science

Selected Publications

*Equal Contributions

[1] Rissanen, S.*, **OuYang, R.***, He, J., Chen, W., Heinonen, M., Solin, A., & Hernández-Lobato, J. M. (2025). Progressive Tempering Sampler with Diffusion. In *ICML* 2025.

[2] **R. K. OuYang***, B. Qiang*, J. M. Hernández-Lobato. BNEM:A Boltzmann Sampler Based on Bootstrapped Noised Energy Matching. In *Arxiv 2409.09787*.

[3] **R. K. OuYang**. Energy-based Neural Sampler for Boltzmann Distribution. *MPhil Thesis*.

[4] **R. K. OuYang**, A. Elliot, S. Limnios, M. Cucuringu, G. Reinert. L2G2G: A Scalable Local-to-Global Network Embedding with Graph Autoencoders. In *Complex Networks and their Applications 2023*.

Academic Services

Reviewing

- Conference:

- Workshop:

Supervision and Teaching

MEng Project Supervision — University of Cambridge

Sunaabh Trivedi — *Better Diffusion Models for Molecular Modelling* — *Oct 2024 - June 2025*

Luran Wang — *Towards better Neural Samplers for Boltzmann Distribution* — *Oct 2024 - June 2025*

MPhil Thesis Supervision — University of Cambridge

Antonio Franca — *Apr 2025 - present*

James Yu — *Apr 2025 - present*

Awards and Achievements

Distinction in MPhil Degree, University of Cambridge *2024*
*Ranked top **20%** in MPhil in Machine Learning and Machine Intelligence*

Travel and Research Grants, Wolfson College, University of Cambridge *2023*
Award for supporting my travelling for conference

Outstanding Graduates, Harbin Institute of Technology (Shenzhen) *2023*
*Ranked top **10**% in HITsz*

Distinction in BEng Degree, Harbin Institute of Technology (Shenzhen) *2023*
*Ranked top **10**% in BEng in Data Science*

International Exchange Program Scholarship, HITsz *2022*
*Scholarship for visiting in Oxford, valued at abount **200,000** CNY*

Others

Athletic

Player, Wolfson College (University of Cambridge) Football Varsity — *2023 - 2024*

Player, Harbin Institute of Technology (Shenzhen) Football Varsity — *2020 - 2023*

Captain, Harbin Institute of Technology (Shenzhen) Science School Football Team — *2021 - 2023*

2nd place of HITsz Football League Season 22-23 — *2023*

2nd place of HITsz Football League Season 20-21 — *2021*

2nd place of HITsz Futsal League Season 20-21 — *2021*

3rd place of HITsz Football League Season 19-20 — *2020*

Languages

- Cantonese (1st Native)
- Chinese Mandarin (2nd Native)
- English (Professional working proficiency; IELT 7.0)
- French (Elementary proficiency)