

Zidong Chen

27 St. Ann's Road, Yara Student, London, W11 4ST
zidong.chen25@imperial.ac.uk — Mobile: +44 7958 065535

EDUCATION

BSc in Mathematics – University of Sheffield <i>First Class Honours (81.4/100), WES 4.0/4.0</i>	2022 – 2025
MRes in AI and Machine Learning – Imperial College London	2025 – 2026

PUBLICATION

[1]**Zidong Chen**, Zihao Guo, Peng Wang, ThankGod Itua Egbe, Yan Lyu, Chenghao Qian, “Dense-Jump Flow Matching with Non-Uniform Time Scheduling for Robotic Policies: Mitigating Multi-Step Inference Degradation” **Submitted** to International Conference of Robotic Automation 2026 (ICRA), <https://arxiv.org/pdf/2509.13574>

[2]Jing Kou, **Zidong Chen**, Liang Zhang, Haiyan Qin, Wang Kang and Wei W. Xing, “Accuracy Is Not Always We Need: Precision-aware Bayesian Yield Optimization,” **accepted** to IEEE Design Automation Conference 2025(DAC)

[3]Wei W. Xing, Hong Chen, **Zidong Chen**, Zhishan Quan, Bertrand Laratte, Rebecca Holbach, Mark Walsh, Jing Pu, Jose L. Casamayor, “Adaptive LCI Data Completion: Integrating Neural Processes and Active Learning for Enhanced Life Cycle Assessment,” **accepted** to 32nd CIRP Conference on Life Cycle Engineering (LCE)

SELECTED RESEARCH EXPERIENCE

Generative Robotic Policies for Imitation Learning <i>Research Assistant</i>	Jul. 2025 – Sep. 2025 <i>Manchester Metropolitan University</i>
<ul style="list-style-type: none">Developed diffusion- and flow-matching-based policies for imitation learning.Investigated why multi-step inference in flow matching degrades robotic performance.Proposed a non-uniform time schedule and a Dense-Jump ODE solver to mitigate multi-step inference degradation, achieving up to 16.6% one-step and 23.7% multi-step performance gains; paper submitted to the International Conference on Robotics and Automation (ICRA) 2026.	
Multi-fidelity Bayesian Yield Optimization <i>Research Assistant (over £7,000 grant)</i>	Oct. 2024 – May 2025 <i>University of Sheffield</i>
<ul style="list-style-type: none">Developed multi-fidelity models (autoregressive, non-linear AR, and continuous AR) and a Bayesian optimization acquisition function over continuous fidelity; analyzed the relationship between yield precision and fidelity construction.Reduced simulation cost by over 10× while achieving better final designs and robustness than state-of-the-art high-fidelity baselines; paper published at the IEEE Design Automation Conference (DAC) 2025.	
Automatic Gaussian Processes for AI4Science <i>UGRI Summer Research (£1,500 grant)</i>	Jun. 2024 – Jul. 2024 <i>University of Sheffield</i>
<ul style="list-style-type: none">Developed automatic kernel selection methods—deep kernel learning and neural kernels—to enhance model performance.Reproduced and extended sparse Gaussian process models for large-scale data; implemented Conjugate Gradient and Lanczos methods to accelerate training on modern hardware. Poster received Honourable Mention in Statistics at the SIAM-IMA Student Chapter Competition.	

SELECTED PROFESSIONAL EXPERIENCE

Machine Learning Engineer <i>Part-time Internship</i>	Feb. – June 2024 <i>IceLab-X</i>
<ul style="list-style-type: none">Investigated the causes of non-positive-definite covariance matrix errors during training—a long-standing technical challenge in the community—and developed methods to resolve the issue.Authored over 2,000 lines of Python code using PyTorch for Gaussian Processes and Bayesian Optimization models, including their core components. Developed Jupyter Notebook demonstrations and mathematical tutorials for researchers and industry partners.	

Machine Learning Engineer

Feb. 2024 – Now

Full-time Internship

Eastern Institute for Advanced Study

- Developed Neural Process (NP) models to enhance chip thermal simulation by fitting the residuals of low-fidelity solvers, achieving significant reductions in cost and runtime while maintaining accuracy and interpretability, thereby advancing domestic alternatives in chip simulation.

OPEN SOURCE CONTRIBUTIONS

- **Imitation Policy Minimal** (GitHub ★3): Implemented minimal yet complete examples of imitation learning algorithms for educational and research use.
- **Mini GP** (GitHub ★23): Developed a PyTorch-based Gaussian Process library with kernel composition and scalable inference methods.
- **Make Claude Work Hard** (GitHub ★9): Created a script to refresh users' Claude account usage limit, aligning availability with users' work schedules.

HONOURS & AWARDS

1. ***Overall Best Submission & Most Valuable Solution Awards***, SoMaS Team Challenge 2022-2023
2. ***International Undergraduate Scholarship 2023 & 2024*** (£ 7,500 grant)
3. ***Honourable Mention for Statistics***, SIAM-IMA Student Chapter Competition

REFERENCES

1. **Dr. Peng Wang**
Research Supervisor
Email: p.wang@mmu.ac.uk
2. **Dr. Wei Xing**
Research Supervisor & Lecturer
Email: w.xing@sheffield.ac.uk
3. **Dr. Dimitrios Roxanas**
Mentor & Lecturer
Email: D.Roxanas@sheffield.ac.uk