

# Daolang Huang

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## Summary

Final-year PhD researcher at Aalto University focused on **efficient and robust experimental design and data acquisition, sequential decision-making, and meta-learning**. Interested in building **foundation models for scientific discovery**, with research spanning foundation and amortized models for experimental design, black-box optimization, tabular and time-series data, and simulation-based inference. 15 papers (including 7 first/co-first-author) at **NeurIPS, ICLR, ICML, and AISTATS**, including two first-author **Spotlights**.

## Experience

### Meta | Research Scientist Intern

Jun 2026 – Present

Ads Ranking AI Research (Monetization) | New York, US

- Research **sequential decision-making and time series foundation models** within the Ads Ranking AI Research team.

### University of Oxford | Visiting PhD Researcher

Feb 2026 – May 2026

Department of Statistics | Oxford, UK

- Investigated **Bayesian experimental design and tabular foundation models** in the RainML Group, supervised by Prof. Tom Rainforth.

### Aalto University | Doctoral Researcher

Jan 2023 – Present

Department of Computer Science | Espoo, Finland

- Research conducted with the Probabilistic Machine Learning group at Aalto University and the Machine and Human Intelligence group at the University of Helsinki; affiliated with FCAI and ELLIS Institute Finland.
- Develop **amortized inference** methods using neural processes and prior-data fitted networks to accelerate Bayesian inference and sequential decision-making.

### Aalto University | Machine Learning Research Assistant

Jun 2021 – Dec 2022

Department of Computer Science | Espoo, Finland

- Researched **human-in-the-loop Bayesian optimization**, knowledge elicitation, and Bayesian active learning in the Probabilistic Machine Learning group, supervised by Prof. Samuel Kaski.

### Neusoft | Software Engineering Intern

Jun 2019 – Aug 2019

Guangzhou, China

- Worked as a **Python developer** during a summer software engineering internship.

## Education

### Aalto University | PhD, Doctoral Programme in Science

2023 – Present

Supervisors: Samuel Kaski (Aalto University and University of Manchester) and Luigi Acerbi (University of Helsinki).

### Aalto University | MSc, Machine Learning, Data Science and AI

2020 – 2022

GPA: **4.68/5** (Major: **5/5**); graduated with honours.

### Jinan University | BSc, Computer Science and Technology

2016 – 2020

Average grade: **87/100** (Major: **89/100**).

## Technical Skills

**Languages:** **Python**, SQL, R, C/C++.

**ML frameworks & libraries:** **PyTorch**, Transformers, NumPy/SciPy, pandas, scikit-learn, BoTorch, LoRA / PEFT fine-tuning.

**Methods:** foundation models (tabular, time-series), in-context learning & meta-learning, Bayesian inference, Bayesian optimization, reinforcement learning, sequential decision-making, experimental design, active learning, uncertainty quantification, preference learning.

**Infrastructure & tooling:** Linux/Bash, Git, Slurm, multi-GPU training, Weights & Biases, Hydra, LaTeX.

## Publications

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### First-author and co-first-author conference papers

1. **Efficient Adaptive Data Acquisition via Pretrained Belief Representations**  
Daolang Huang, Zhuoyue Huang, Conor Hassan, Luigi Acerbi, Samuel Kaski, Tom Rainforth.  
[NeurIPS 2026](#)
2. **ALINE: Joint Amortization for Bayesian Inference and Active Data Acquisition**  
Daolang Huang, Xinyi Wen, Ayush Bharti, Samuel Kaski\*, Luigi Acerbi\*.  
[NeurIPS 2025 Spotlight \(Top 3.2%\)](#)
3. **PABBO: Preferential Amortized Black-Box Optimization**  
Xinyu Zhang\*, Daolang Huang\*, Samuel Kaski, Julien Martinelli.  
[ICLR 2025 Spotlight \(Top 5.1%\)](#)
4. **Amortized Probabilistic Conditioning for Optimization, Simulation and Inference**  
Paul Chang\*, Nasrullo Loka\*, Daolang Huang\*, Ulpu Remes, Samuel Kaski, Luigi Acerbi.  
[AISTATS 2025](#)
5. **Amortized Bayesian Experimental Design for Decision-Making**  
Daolang Huang, Yujia Guo, Luigi Acerbi, Samuel Kaski.  
[NeurIPS 2024](#)
6. **Learning Robust Statistics for Simulation-based Inference under Model Misspecification**  
Daolang Huang\*, Ayush Bharti\*, Amauri Souza, Luigi Acerbi, Samuel Kaski.  
[NeurIPS 2023](#)
7. **Practical Equivariances via Relational Conditional Neural Processes**  
Daolang Huang, Manuel Haussmann, Ulpu Remes, ST John, Grégoire Clarté, Kevin Sebastian Luck, Samuel Kaski, Luigi Acerbi.  
[NeurIPS 2023](#)

### Other conference papers

8. **Amortized Bayesian Experimental Design with In-Context Knowledge Conditioning**  
Zhanghu Zhao, Daolang Huang, Xinyi Wen, Samuel Kaski.  
[NeurIPS 2026](#)
9. **Prediction-Powered Active Testing**  
Kianoosh Ashouritaklimi, Valentin Kilian, Daolang Huang, Tom Rainforth, Francois Caron.  
[NeurIPS 2026](#)
10. **Constrained Bayesian Experimental Design via Online Planning**  
Yujia Guo, Daolang Huang, Xinyu Zhang, Sammie Katt, Samuel Kaski, Ayush Bharti.  
[ICML 2026](#)
11. **In-Context Multi-Objective Optimization**  
Xinyu Zhang, Conor Hassan, Julien Martinelli, Daolang Huang, Samuel Kaski.  
[ICLR 2026](#)
12. **PriorGuide: Test-Time Prior Adaptation for Simulation-based Inference**  
Yang Yang, Severi Rissanen, Paul E. Chang, Nasrullo Loka, Daolang Huang, Arno Solin, Markus Heinonen, Luigi Acerbi.  
[ICLR 2026](#)
13. **Efficient Autoregressive Inference for Transformer Probabilistic Models**  
Conor Hassan, Nasrullo Loka, Cen-You Li, Daolang Huang, Paul E. Chang, Yang Yang, Francesco Silvestrin, Samuel Kaski, Luigi Acerbi.  
[ICLR 2026](#)
14. **Cost-Aware Simulation-Based Inference**  
Ayush Bharti, Daolang Huang, Samuel Kaski, F.X Briol.  
[AISTATS 2025](#)
15. **Sequential Convolution and Runge-Kutta Residual Architecture for Image Compressed Sensing**  
Runkai Zheng, Yinqi Zhang, Daolang Huang, Qingliang Chen.  
[ECCV 2020](#)

\*Equal contribution.

### Preprints and workshop papers

16. **Constraint-aware Bayesian Experimental Design**  
Yujia Guo, **Daolang Huang**, Xinyu Zhang, Sammie Katt, Samuel Kaski, Ayush Bharti.  
ICML-EIML Workshop, 2026
17. **Efficient Autoregressive Inference for Tabular Foundation Models**  
Conor Hassan, Nasrulloh Loka, Cen-You Li, **Daolang Huang**, Paul E. Chang, Yang Yang, Francesco Silvestrin, Samuel Kaski, Luigi Acerbi.  
EurlPS AI for Tabular Data Workshop, 2025
18. **Inference-Time Prior Adaptation in Simulation-Based Inference via Guided Diffusion Models**  
Paul E. Chang, Severi Rissanen, Nasrulloh Loka, **Daolang Huang**, Luigi Acerbi.  
ICLR-FPI Workshop, 2025
19. **Amortized Decision-Aware Bayesian Experimental Design**  
**Daolang Huang**, Yujia Guo, Luigi Acerbi, Samuel Kaski.  
NeurIPS-BDU Workshop, 2024
20. **Augmenting Bayesian Optimization with Preference-based Expert Feedback**  
**Daolang Huang**, Louis Filstroff, Petrus Mikkola, Runkai Zheng, Milica Todorovic, Samuel Kaski.  
ICML-MFPL Workshop, 2023
21. **Bayesian Optimization Augmented with Actively Elicited Expert Knowledge**  
**Daolang Huang**, Louis Filstroff, Petrus Mikkola, Runkai Zheng, Samuel Kaski.  
[arXiv:2208.08742](https://arxiv.org/abs/2208.08742), 2022 | Preprint
22. **Sseldnet: a fully end-to-end sample-level framework for sound event localization and detection**  
**Daolang Huang**, Ricardo Falcon Perez.  
DCASE, 2021

### Honors & Scholarships

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- Encouragement Grant, Finnish Foundation for Technology Promotion, 2025.
- Incentive Scholarships, Aalto University, 2025.
- **Top 3 Nominee, AI Researcher of the Year**, AI Finland, 2024.
- Full PhD Funding, Finnish Center for Artificial Intelligence (FCAI), 2023.
- Honours Program in Computer Science, Aalto University, 2022.
- Dean's List Scholarships, Aalto University, 2021.
- Aalto University Scholarship (100% tuition waiver), Aalto University, 2020.
- Scholarship for Outstanding Students, Jinan University, 2017, 2018, 2019.

### Invited Talks

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- **RainML Lab**, *University of Oxford* — Oct 2025.
- **Seminar on Computational Engineering**, *LUT University* — Sep 2025.
- **Accelerating Statistical Inference and Experimental Design with Machine Learning Workshop**, *Isaac Newton Institute, Cambridge* — Jun 2025.
- **Mathematical Perspective on Machine Learning Seminar**, *University of Helsinki* — Nov 2023.

### Academic Service & Mentoring

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- **Area Chair, ICLR 2027**; **Gold Reviewer, ICML 2026**; Regular reviewer for NeurIPS, ICLR, ICML, AISTATS and TMLR.
- Supervised **six** students across master's theses, research assistant and internship projects; Deep Learning teaching assistant at Aalto University (2022–2024).