

# Wenlin Chen

PhD Student in  
Machine Learning

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## Wenlin Chen

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(Updated June 27, 2023)

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## Education

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### University of Cambridge / PhD in Machine Learning

October 2021 - Present, Cambridge, England, United Kingdom

Cambridge-Tübingen PhD Fellowship in Machine Learning.

Supervisors: Prof José Miguel Hernández-Lobato, Prof Bernhard Schölkopf, Dr Hong Ge.

Research Interests: Deep Learning, Probabilistic Modeling, Representation Learning,  
Multi-task/Meta Learning, Generative Modeling, Optimization, Causal Modeling, AI for Science.

### University of Cambridge / MPhil in Machine Learning and Machine Intelligence

October 2020 - September 2021, Cambridge, England, United Kingdom

Grade: Distinction.

Thesis: Causal Representation Learning for Latent Space Optimization.

### University of Manchester / BSc (Hons) in Mathematics

September 2018 - June 2020, Manchester, England, United Kingdom

Grade: First Class Honors (93.4/100, top 1.5%).

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## Experience

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### University of Cambridge / Doctoral Fellow

October 2021 - Present, Cambridge, England, United Kingdom

Cambridge-Tübingen PhD Fellow in Machine Learning.

### Max Planck Institute for Intelligent Systems / Doctoral Fellow

October 2021 - Present, Tübingen, Baden-Württemberg, Germany

Cambridge-Tübingen PhD Fellow in Machine Learning.

### University of Cambridge / Research Assistant

January 2021 - September 2021, Cambridge, England, United Kingdom

Probabilistic and Causal Machine Learning.

### King Abdullah University of Science and Technology / Research Intern

August 2020 - September 2020, Remote

Federated Learning and Distributed Optimization.

### University of Manchester / Research Assistant

September 2018 - June 2020, Manchester, England, United Kingdom

Ensemble Deep Learning.

## Imagination Technologies / Research Engineer Intern

June 2019 - August 2019 , Kings Langley, England, United Kingdom

Deep Learning on Edge Devices.

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## Publications

(\*Equal Contribution)

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Wenlin Chen\*, Julien Horwood\*, Juyeon Heo, José Miguel Hernández-Lobato. **Leveraging Task Structures for Improved Identifiability in Neural Network Representations**. ICML Workshop on Spurious Correlations, Invariance and Stability (SCIS), 2023.

Wenlin Chen, Hong Ge. **Neural Characteristic Activation Value Analysis for Improved ReLU Network Feature Learning**. arXiv preprint 2305.15912, 2023.

Wenlin Chen, Austin Tripp, José Miguel Hernández-Lobato. **Meta-learning Adaptive Deep Kernel Gaussian Processes for Molecular Property Prediction**. International Conference on Learning Representations (ICLR), 2023.

Wenlin Chen, Samuel Horváth, Peter Richtárik. **Optimal Client Sampling for Federated Learning**. Transactions on Machine Learning Research (TMLR), 2022.

Austin Tripp, Wenlin Chen, José Miguel Hernández-Lobato. **An Evaluation Framework for the Objective Functions of De Novo Drug Design Benchmarks**. ICLR Workshop on Machine Learning for Drug Discovery (MLDD), 2022.

Wenlin Chen. **Causal Representation Learning for Latent Space Optimization**. MPhil Thesis, University of Cambridge, 2021.

Andrew Webb, Charles Reynolds, Wenlin Chen, Henry Reeve, Dan Iliescu, Mikel Luján, Gavin Brown. **To Ensemble or Not Ensemble: When Does End-to-End Training Fail?**. European Conference on Machine Learning (ECML), 2020.

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## Awards

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Cambridge University Engineering Department (CUED) PhD Studentship (May 2021)

Cambridge Trust Scholarship (April 2021)

Cambridge-Tübingen PhD Fellowship in Machine Learning (February 2021)

The Royal Statistical Society (RSS) Prize (July 2020)

International Mathematics Scholarship (August 2019)

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## Service

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**Reviewer**, Conference on Neural Information Processing Systems (NeurIPS), 2023.

**Program Committee and Reviewer**, ICML Workshop on Spurious Correlations, Invariance and Stability (SCIS), 2023.

**Reviewer**, International Conference on Machine Learning (ICML), 2023.

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## Talks

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**Causal and Disentangled Representation Learning**, Machine Learning Reading Group, Machine Learning Group (MLG), University of Cambridge, March 2023.

**Meta-learning Adaptive Deep Kernel Gaussian Processes for Molecular Property Prediction**, Research Talk, Computational and Biological Learning Group (CBL), University of Cambridge, March 2023.

**Meta-learning Adaptive Deep Kernel Gaussian Processes for Molecular Property Prediction**, Invited Talk, Computational Statistics and Machine Learning (CSML) Reading

Group, Imperial College London, November 2022.

**Meta-learning Adaptive Deep Kernel Gaussian Processes for Molecular Property Prediction**, Invited Talk, Workshop on Frontiers in Machine Learning and Decision Making, Huawei R&D UK, November 2022.

**Modified Differential Method of Multipliers: How Can We Make Machine Learning Algorithms Tunable?**, Tea Talk, Computational and Biological Learning Group (CBL), University of Cambridge, May 2022.

**Diffusion and Score-based Generative Models**, Machine Learning Reading Group, Machine Learning Group (MLG), University of Cambridge, January 2022.

**Causal Representation Learning for Latent Space Optimization**, Invited Talk, Cambridge-Tübingen Machine Learning Symposium, Remote, January 2022.

**Causal Representation Learning for Latent Space Optimization**, Research Talk, MPhil in Machine Learning and Machine Intelligence, University of Cambridge, June 2021.

**To Ensemble or Not Ensemble: When Does End-to-End Training Fail?**, Interview Talk, Cambridge-Tübingen Machine Learning Symposium, Remote, January 2021.

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## Teaching and Supervision

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**Co-supervisor**, MEng Project, University of Cambridge (Lent Term and Easter Term 2023).

**Supervisor**, MLMI1 Introduction to Machine Learning (MPhil Module), University of Cambridge (Michaelmas Term 2022).

**Co-supervisor**, MEng Summer Project, University of Cambridge (Research Term 2022).

**Demonstrator**, 4F10 Deep Learning and Structured Data (MEng Module), University of Cambridge (Michaelmas Term 2021 and Lent Term, Easter Term, Research Term 2022) .