Wenlin Chen

PhD Student in Machine Learning

Wenlin Chen
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Education

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%).

Experience

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.

Publications

(*Equal Contribution)

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.

Awards

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)

Professional Service

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.

Talks

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.

Teaching

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) .