Xingyue Huang

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Research Interest

Graph Neural Networks, Knowledge Graphs, Graph Representation Learning, Deep Learning

Education

University of Oxford 09/2023 – Present
DPhil in Computer Science Oxford, United Kingdom
Supervised by Prof. Michael Bronstein and Dr. İsmail Ceylan

University of Oxford 09/2019 – 06/2023
MMathCompsci in Mathematics and Computer Science Oxford, United Kingdom
Graduated with Distinction

Selected Publication

First Author of Link Prediction with Relational Hypergraphs Under Review for NeurIPS 2024
Applying conditional message passing for link prediction on fully relational data with expressiveness guarantee

Author of Cooperative Graph Neural Networks ICML 2024
A dynamic and flexible message-passing paradigm in which each node can choose a different communication strategy

First Author of A Theory of Link Prediction via Relational Weisfeiler-Leman on Knowledge Graph NeurIPS 2023
A theoretical expressiveness study for advanced link prediction models on knowledge graphs

Author of A Novel Multiobjective Genetic Programming Approach to Cancer Diagnosis through Microarray Data
IEEE Transaction on Cybernetic
A multi-objective genetic programming framework for high-dimensional classification, addressing existing limitations.

First Author of Feature Selection of High Dimensional Data by Adaptive Potential Particle Swarm Optimization
IEEE CEC 2019
Proposing a novel Particle Swarm Optimization with feature pre-filtering and adaptive cut-point selection.

Professional Experience

Mathematical Institute, University of Oxford 06/2022 – 09/2022
Summer Research Intern Oxford, United Kingdom

- Explored the use of the Neural Control Differential Equation model to address the problem of protein folding
- Enhanced the capability of the Alphafold with rough path theory
- Developed a deep-learning based signature-inverse model to reduce the complexity of standard signature inversion

Alibaba Group 07/2021 – 09/2021
Machine Learning Engineer Intern Hangzhou, China

- Developed an object detection system for video subtitle-detection with Faster-RCNN model
- Conducted semantic analysis on OCR-detected titles to assess the quality of video descriptions
- Improved accuracy of object detection and classification by 10% and were incorporated into production

Alirus Biotech. 06/2020 – 09/2020
Machine Learning Engineer Intern Shenzhen, China

- Implemented image segmentation for Petri dish centering and Hough Transform for colony ROI detection
- Developed a colony counting algorithm by combining CNNs with traditional computer vision techniques
- Delivered a model for automatic colony counting with 20% decreased in terms of regression metric

Skills

Programming: Python (Pytorch, Tensorflow, Triton), MATLAB, Haskell, Scala, LaTeX