KEYUE JIANG

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EDUCATION

University College London & Unviersity of Oxford *Nov 2022 - Sept 2026 (expected)*
PhD student in Information Engineering
· Supervisors: Dr. Laura Toni and Dr. Xiaowen Dong
· Research Interests: Graph Machine Learning, Graph Signal Processing, Statistical Graph Theory.
· Fully funder by UKRI Engineering and Physical Sciences Research Council.

University College London *Sept 2020 - Dec 2021*
MSc Data Science Taught component: 86.31% (Rank 2/43)
· Supervisor: Dr. Pasquale Minervini Dissertation: 80.80% (Distinction)
· Related Courses: Machine learning, Statistical Data Science, Graphical Models, Bayesian Methods, Probabilistic and Unsupervised Learning, Statistical Natural Language Processing, Forecasting.

Zhejiang University *Sept 2016 - July 2020*
BEng Ocean Engineering and Technology Overall GPA: 86.32% (3.79/4)
last 2 years GPA: 90.06% (3.91/4)

University of California, Los Angeles *Aug 2019 - Sept 2019*
Summer Session with courses in Statistics GPA: 3.85/4
· Related Courses: Linear Models, Statistical Design and Analysis of Experiments

University College London *Sept 2018 - Dec 2018*
Affiliate Arts and Sciences Programme Grade:74%
· Related Courses: Python Data Analysis; Data Science and Visualisation

SKILLS

Research Interests	Graph Representation Learning, Graph Signal Processing, Graph Neural Networks, Knowledge Graphs
Language Ability	IELTS 7.5 - 7.5 for Listening, Speaking, Writing, 6.5 for Reading

RESEARCH

Regularizing Knowledge Graph Embedding Models May 2021 - Sept 2021
Advisor: Pasquale Minervini *Natural Languange Processing Group at UCL*
· A paper under review. Our preprint can be found here (in IJCAI format).
· We investigated various regularizers to improve the model generalization in Knowledge Graph Completion (KGC), with a focus on Knowledge Graph Representation methods.
· A multi-task learning paradigm was implemented to train better embeddings. The auxiliary tasks were designed based on methods in graph representation learning and significantly improved the generalization when the model had high complexity and insufficient data.
· Manifold regularization and Gradient Penalty were utilized as regularizers to increase model stability and robustness. Evolution Strategy was applied to automate the regularizer selection.

Graph Machine Learning in Scientific Fields Nov. 2021 - Now
· *Advisor: Huajun Chen and Renjun Xu* *College of Computer Science, Zhejiang University*
· We develop graph machine learning algorithms for tasks in Material science, chemistry, and biomedical engineering, such as material properties prediction, protein design, drug discovery, etc.

Spatio-temporal Prediction based on Graph Attention Networks Oct 2019 - June 2020

· *Advisor: Dongfang Ma* *Ocean college, Zhejiang University*
· A novel spatio-temporal Graph Neural Network was designed: Graph Attention Network for spatial feature extraction, attention-driven LSTM for temporal prediction, residual learning and gated graph segmentation for optimization.
· The model was used to forecast traffic flow for government management and public travel advice; Reached a 7% increased accuracy compared to SOTA with a faster convergence time.
· Awarded as **Excellent Graduation Dissertation** for undergraduates in ZJU.

Modeling and Control of Two-wheeled Self-balancing Robot June 2018 - Apr 2019
College of Control Science and Engineering, Zhejiang University
· Verified the effectiveness of PID controller, LQR optimal controller, and LMI sliding mode variable structure controller on SIMULINK.
· Built a two-wheeled self-balancing robot as a platform to test the reliability of controllers with C++; Developed a cascade control algorithm to further ensure the stability of the robot.
· Awarded as **Excellent Scholar Research Training Program** in ZJU.

INTERNSHIP

Netease Hangzhou Research Center Aug 2020 - Oct. 2020
Algorithm Intern in AI
· Responsible for computer vision algorithm research, preliminary model reproduction and tuning.
· Designed and implemented a watermark removal algorithm using watermark estimation and GAN-based image restoration algorithms; Led the project deployment.
· Participated in the research and design of video quality analysis algorithms; Performed feature extraction on multi-modal data and used XGBoost for regression analysis.
Technologies: PyTorch, OpenCV, XGBoost, GAN.

Zhejiang SUPCON Research Co., LTD. Aug 2017 - Sep 2017
Assistant Engineer in robotics
· Assisted the logistics robot design to complete tasks like target recognition and wireless communication.
· Implemented feature matching algorithms, e.g. SIFT and ORB, to recognize target during the sorting process; Reached a recognition rate of 40ms per frame.
· Implemented the communication system between microprocessors and main PC.
Technologies: Embedded System Design, Object Detection, Computer Vision.

EXTRA-CURRICULAR ACTIVITIES

Volunteer Work
· 511 hours - According to the record from ZJU Volunteer System.
· Excellent Manager Award - Alibaba Alliance for Internet Security Volunteers.
· Director of Appliance Department, Electrical Volunteer Association, ZJU - provided volunteer computers and appliances mending service to faculty and students.

AWARDS AND SCHOLARSHIPS

PhD studentship from UKRI, Engineering and Physical Science Research Council	2022
Dean's Prize, University College London	2022
Chinese Government Scholarships for Overseas Study	2022
Excellent Graduation Dissertation of Zhejiang University	2020
Excellent Scholar Research Training Program of Zhejiang University	2019

Global Scholar Award for overseas study, Zhejiang University 2018
Academic Excellence Scholarship, Zhejiang University 2016-2017, 2018-2019
3^{rd} prize of outstanding Student Scholarship, Zhejiang University 2016-2017