Jun Jie Ou Yang

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Education

Dartmouth College Hanover, USA
Doctor of Philosophy in Computer Science (Ph.D.) 09/2025–06/2030 (expected)

University of Southern California Los Angeles, USA
Master of Science in Computer Science 09/2023–05/2025

University of British Columbia Vancouver, Canada
Bachelor of Science in Computer Science and Statistics 09/2019–05/2023
Dean's Honour List for Winter Sessions 2020–2021 and 2022–2023

Publications

- Hao Guo, Xugong Qin, **Junjie Ouyang**, Peng Zhang, Gangyan Zeng, Yubo Li, Hailun Lin, "Towards Natural Language-Based Document Image Retrieval: New Dataset and Benchmark", in *Proceedings of CVPR 2025. DOI: 10.1109/CVPR52734.2025.02767.
- Xugong Qin, Peng Zhang, **Junjie Ouyang**, Gangyan Zeng, Yubo Li, Wanqian Zhang, "CLIP is Almost All You Need: Towards Parameter-Efficient Scene Text Retrieval without OCR", in *Proceedings of CVPR 2025. DOI: 10.1109/CVPR52734.2025.02316.
- Runbo Zhao, **Junjie Ouyang**, Chen Gao, Xugong Qin, Gangyan Zeng, Xiaoxu Hu, and Peng Zhang, "Perception-Enhanced Generative Transformer for Key Information Extraction from Documents", *Springer, Cham*, 2024, 15331:91–106. DOI: 10.1007/978-3-031-78119-3_7.
- Lian Xiang, **Junjie Ouyang**, Xinrong Chen, "Research Progress of Virtual Reality Technology in Postoperative Pain Management", *Journal of Mechanics in Medicine and Biology*, 2024, 2440071 (14 pages). DOI: 10.1142/S0219519424400712.
- **Junjie Ouyang**, "ObjectDetection: A Comprehensive Toolkit for Advanced Object Detection", *IIoTBDSC 2024*. DOI: 10.1109/IIoTBDSC64371.2024.00051.
- Mengyuan Huang, **Junjie Ouyang**, Yaolin Zhang, "Deep Learning Approaches in Sentiment Analysis", *CSTMM 2022*, Chongqing, China. DOI: 10.1109/NetCIT57419.2022.00026.

Research Experience

University of Southern California Los Angeles, USA
Research Assistant with Assistant Professor Yue Zhao 09/2023–12/2024

- Brainstormed with peers to improve PyGOD, an open-source Python library for graph outlier detection.
- Assisted in presenting theoretical models proposed in the research group.
- Modified Python scripts and wrote new modules for PyGOD; conducted feasibility and accuracy tests.

- Drafted documentation and reports summarizing findings and proposed changes.

Institute of Computing Technology, Chinese Academy of Sciences Beijing, China
Research Assistant with Professor Peng Zhang 04/2023–Present

- Developed Word Detection Algorithms: Designed modules for structured text in complex layouts under PEGT project.
- Enhanced Multimodal Data Processing: Integrated visual and textual data using pre-trained models.
- Evaluated PEGT: Benchmarked on SROIE and CORD; showed F-measure gains; published at ICPR 2024.
- Published on PaddlePaddle: Sole author of PaddleDetection module paper (IIoTBDSC 2024).
- Optimized YOLO and Faster R-CNN models with data augmentation for robustness.
- Co-authored CVPR 2025 papers on CLIP and document retrieval.

West China Medical School, West China Hospital, Sichuan University Chengdu, China
Research Assistant with Professor Xin Rong Chen 12/2023–06/2024

- Researched VR for postoperative pain management; explored patient distraction and anxiety reduction.
- Contributed introduction on VR technology for publication in *Journal of Mechanics in Medicine and Biology*.
- Reviewed combined therapies integrating VR with traditional approaches.

University of British Columbia Vancouver, Canada
Research Assistant with Professor Tae Oum 09/2022–12/2022

- Analyzed impacts of air transport connectivity in China; compiled and processed large SQL datasets.
- Conducted econometric analysis using Lasso regression.

University of California, Los Angeles Los Angeles, USA
Research Assistant with Professor Jinyuan Zhang 04/2022–08/2022

- Conducted industry research on US fintech companies.
- Scraped and preprocessed data with Python and SQL.
- Compared business models and evaluated market impact.

Massachusetts Institute of Technology Cambridge, USA
Undergraduate Researcher with Professor Mark Vogelsberger 06/2021–08/2021

- Built an NLP platform for sentiment analysis on social media reactions.
- Managed databases using SQL and MongoDB.
- Co-authored sentiment analysis paper submitted to CSTMM 2022.

Huazhong University of Science and Technology Wuhan, China
Undergraduate Researcher 01/2021–05/2021

- Assessed marketing strategies and consumer behavior.

- Built a web interface (HTML/JS) for presenting statistical results.
- Designed logistic regression models in Python; increased product sales by 20%.

Internship Experience

MOYI Tech New York, USA
Data Analyst Intern 07/2022–09/2022

- Evaluated the relationship between social media sentiment and market trends.
- Scraped 10,000+ comments with Python; built pipeline to predict index returns.
- Improved prediction accuracy by 50%.

Technical Skills

Languages: Chinese (native), English (fluent), German (basic).
Programming: Python (NumPy, SciPy, PyTorch, Keras, TensorFlow), MATLAB, Java, Haskell, LaTeX, Prolog, C/C++, HTML/CSS/JavaScript, SQL, MongoDB.