JIAKAI CHEN

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EDUCATION

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Master of Computer Science Jan 2026 – Jun 2027 (expected)

- **Coursework in progress**: Introduction to Robotics, Reinforcement Learning, Computational Photography

SIMON BUSINESS SCHOOL, UNIVERSITY OF ROCHESTER

Master of Science in Business Research Sept 2023 – Dec 2025

- Admitted to the PhD program in Finance; completed PhD-level coursework and research training
- Focused on the impact of AI on the financial industry, AI/ML for asset pricing, market microstructure

UNIVERSITY OF HONG KONG

Bachelor of Arts and Sciences in Financial Technology, second major in Computer Science (First Class Honors) Sept 2019 – Jun 2023

- **GPA**: 3.85/4.3
- **Awards**: Dean's Award for Engineering Students, Lee Shau Kee Scholarships
- **Core courses**: Artificial Intelligence (A+), Machine Learning (A+), Applied Deep Learning (A+), Natural Language Processing (A), Computer Vision (A+), Linear Algebra, Probability and Statistics (A+), Intermediate Macroeconomics (A+), Investment and Portfolio Analysis (A+)

RESEARCH EXPERIENCE

University of Illinois Urbana-Champaign

Research Intern, Rehg Lab Feb 2026 – Present

- Developing a pose estimation system toward a multimodal foundation model for human motion understanding in real-world video
- Built end-to-end data pipelines for data collection, video preprocessing, and dataset curation
- Leveraged existing foundation models for large-scale pseudo-annotation, then improved annotation quality through manual labeling and model fine-tuning
- Designed a multimodal foundation model architecture and implemented multi-GPU training and large-scale inference pipelines

University of Illinois Urbana-Champaign

ProCLIP: Product Space Multimodal Contrastive Alignment Jan 2026 – Mar 2026

Poster, GRaM Workshop @ ICLR 2026

- Proposed a mixed-curvature product-space framework combining hyperbolic, spherical, and Euclidean manifolds to model hierarchical and compositional structure in multimodal embeddings
- Introduced a geometry-aware CLIP-style objective using a weighted product metric as a principled replacement for cosine similarity
- Implemented lightweight manifold-specific projection heads on frozen CLIP features, enabling drop-in geometric alignment without backbone finetuning
- Demonstrated consistent improvements (2–7% Recall@1) over single-manifold baselines on Flickr30k and MSCOCO image–text retrieval

Simon Business School

Working Paper: AI in Mutual Funds: Performance, Herding, and Stock Price Informativeness Sept 2024 – Nov 2025

- Mutual funds using AI outperform non-AI funds in terms of abnormal returns after controlling for other fund characteristics, and the outperformance is likely due to better stock-picking skills and downside protection
- AI funds herd less on the crowd of all mutual funds, and AI helps incorporate public information into stock prices faster while reducing the amount of private information

HKU Business School

Research Assistant, Project led by Dr. Yang YOU Apr 2022 – Oct 2022

- Extracted visual features of the images, and evaluated the applicability of each feature based on intrinsic meaning, correlation to other features, and calculation complexity
- Developed machine learning model for price prediction based on the acquired data and extracted features
- Built the out-of-sample test dataset and tested the performance of the machine learning model with strong results

PROJECT EXPERIENCE

Robotic Manipulation and Vision-Based Control with UR3 and ROS Jan 2026 – Apr 2026

Group Leader

- Programmed a UR3 robotic arm in ROS for autonomous manipulation tasks, including Tower of Hanoi and vision-guided pick-and-place on physical blocks
- Implemented forward kinematics and analytical inverse kinematics for motion planning and end-effector control
- Developed perception modules for color thresholding, blob centroid detection using OpenCV, camera calibration, and pixel-to-world coordinate transformation
- Integrated perception, kinematics, and control into an end-to-end vision-to-action pipeline with real-time feedback on physical hardware

Final Year Project: An E-Wallet Solution for Financial Inclusion Jul 2022 – May 2023

Group Leader, supervised by Dr. Siu Ming YIU

- Designed an e-wallet system with both online and offline functionalities to enhance financial inclusion
- Initiated the project idea and framework, came up with the functional design and workflow of the e-wallet, identified the key technical problems for the e-wallet and raised preliminary solutions

Object Detection and Tracking in Videos Mar 2022 – May 2022

Group Leader, instructed by Dr. Ping LUO

- Applied object detection for each frame with MMDetection
- Applied Kalman filter to predict and track objects between different frames

SuperCloudPay Project for Dean's Innovation Fund Feb 2022

Group Member, supervised by Dr. Kam Pui CHOW

- To design a cloud-based e-wallet system and write a business proposal for the project
- Participated in the proposition of the cloud-based structure and the functions including privacy-preserving computation, decentralized authorization, auto bill-splitting, and financial planning

Chengdu80 Hackathon Aug 2021

Group Member, supervised by Dr. Man Ho Allen AU

- To categorize corporate risk type for different companies using given corporate data
- Preprocessed corporate data by filling missing values, and trained machine learning model (LightGBM) for detecting different risk types with model explanation technique (LIME) to interpret categorization results
- Helped to build the webpage as an interactive information inquiry system on the corporate data and risk types

RESEARCH INTERESTS

Multimodal representation learning and foundation models, generative modeling, robot perception and learning

TECHNICAL SKILLS

Programming: Python, C/C++, Stata

Frameworks: PyTorch, ROS, ROS2

Research Tools: LaTeX, Git, Weights & Biases

Languages: English (Fluent), Mandarin (Native)