JUNHAN FU

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EDUCATION

The Chinese University of Hong Kong, Shenzhen (CUHK-Shenzhen) — Shenzhen, China
B.S. in Data Science and Big Data Technology (Financial Stream) — Expected Aug 2027
Major GPA: 3.907/4.0*;* **Cumulative GPA**: 3.838/4.0; **Rank**: 10/162

University of California, Berkeley (UC, Berkeley) — Berkeley, CA
Summer Visiting Student — Jun 2024 – Aug 2024

Nanyang Technological University (NTU) — Singapore
Exchange Student | AY2025 Study Abroad Ambassador — Aug 2025 – Dec 2025

Relevant Coursework: Calculus I & II, Probability and Statistics I & II, Linear Algebra and Applications, Ordinary Differential Equations, Data Science, Data Structures, Optimization, Machine Learning, Stochastic Processes, Designing & Developing Databases, Algorithm Design & Analysis, Artificial Intelligence, C/C++ Programming

RESEARCH EXPERIENCE

Speech Algorithm Research Assistant; Advisor: Prof. Benyou Wang — Shenzhen, China
Shenzhen Research Institute of Big Data — Feb 2026 – Present

- Develop a structured speech captioning framework that models semantic, acoustic, paralinguistic, and scene attributes through hierarchical speech representations for fine-grained speech understanding
- Design a Caption-Text-to-Speech (Caption-TTS) dual learning framework with controllability-weighted optimization to jointly improve speech understanding and generation
- Build an automated speech annotation pipeline using multiple Audio LLMs to generate schema-guided consensus pseudo-labels for structured speech supervision

Multimodal Architecture Research Assistant; Advisor: Prof. Weisi Lin — Singapore
Alibaba–NTU Global e-Sustainability CorpLab (ANGEL), NTU — Nov 2025 – Aug 2026

- Implemented and systematically benchmarked state-of-the-art visual token pruning methods (FastV, VScan, CDPruner, VisionSelector, GlimpsePrune, etc.) on LLaVA-v1.5-7B and Qwen2.5-VL-7B
- Developed a training-free uncertainty-aware visual token pruning framework by leveraging transformer multi-head attention variance and prompt perturbation analysis under image noise and question perturbations to preserve task-critical visual tokens while improving inference efficiency
- Extended the framework to a training-based token pruning algorithm called RobustPruner that jointly models token relevance, uncertainty, and diversity, achieving a better efficiency-performance trade-off for multimodal reasoning

Data Simulation & Optimization Research Assistant; Advisor: Prof. Ruizhi Liao — Shenzhen, China
CUHK-Shenzhen — Sep 2024 – Mar 2026

- Built BusScan, an open-source simulation platform integrating configurable traffic simulation, Hough Transform-based road extraction, and parking occupancy modeling for scalable evaluation of bus-based parking sensing strategies across heterogeneous urban environments
- Formulated a large-scale spatiotemporal integer linear programming model for crowdsensing sensor allocation, minimizing sensing vehicles while satisfying spatiotemporal coverage constraints
- Proposed the Self-Trained Cardinality-Branching (STCB) algorithm by integrating row generation with data-driven cutting planes, achieving over 100% optimization speedup; the resulting optimization framework reduced required sensing vehicles by 50.45% on real-world San Francisco transit datasets

PROFESSIONAL EXPERIENCE

Software R&D Intern, IT Operations Department — Nanjing, China
Inspur Communication Information System Co., Ltd. (Inspur Group) — Jun 2026 – Sep 2026

- Designed and executed functional, performance and security testing for China Mobile's (Jiangsu) supply scheduling platform and the AI systems within its LLM suxiaoban and agent, ensuring system quality prior to deployment
- Collaborated with 3 project teams to track 20+ version upgrades, taking charge of producing manual test cases

- Developed AI-assisted automated testing frameworks using uiautomator2 and Allure, leveraging Codex and Trae to automate test script generation and regression testing, improving testing efficiency and coverage

Quantitative Research Intern, AI R&D Department — Shenzhen, China

MY CAPITAL (Hainan) Private Fund Management Partnership — Jan 2026 – May 2026

- Built a reproducible end-to-end ST/*ST risk prediction pipeline by integrating big data processing, interpretable models (TF-IDF + Gradient Boosting), and rule-level understanding of exchange ST criteria, benchmarking accuracy, recall, and false positive rate (FPR)
- Aligned announcement texts with regulatory decision logic and incorporated selective full-text signals through a risk sentence extraction algorithm, evaluating the trade-off between predictive performance and model complexity
- Improved model recall to 82% while maintaining an FPR below 0.2%; the resulting model was applied to the company's subsequent technology iterations

Machine Learning Intern — Shanghai, China

Capgemini Consulting — May 2025 – Aug 2025

- Designed enterprise-level data pipelines covering data crawling, cleaning, and storage to support analytics systems for targeted corporate clients, with the pipeline handling 50,000+ public-opinion textual records
- Developed NLP models (BERT, LSTM) and vision-language models (CLIP, BLIP-2) for public opinion data analysis in the new energy vehicle industry
- Built visualization dashboards for public opinion, sentiment trend (LSTM, ARIMA), and real-time monitoring, the developed system was adopted as a prototype for the company's subsequent production tasks

PROJECT EXPERIENCE

Investment Strategy & Factor Analysis of the U.S. Stock Market — Shenzhen, China

Mentored by a Senior Associate at Citadel LLC — Dec 2025 – Feb 2026

- Conducted systematic analysis of eight U.S. equity factors under the Fama-French framework, examining long-term performance and volatility
- Optimized dynamic asset allocation using GLD and VIX as hedging instruments, achieving a 34.33% annualized return and a Sharpe ratio of 2.94
- Produced quantitative reports and visual analyses on portfolio allocation strategies across bull and bear markets

PUBLICATIONS

Fu, J., Li, Y., & Liao, R. *BusScan: A Simulation Platform for Evaluating Bus-Based On-street Parking Detection Strategies.* IEEE ITSC, 2025.

Pang, B., **Fu, J.**, Liao, R., & Ye, Y. *System-Level Optimization of Crowdsensing Sensor Allocation for Urban Parking in Smart Cities.* IEEE Internet of Things Journal, 2026.

Zhu, H., **Fu, J.**, Zhang, X., Wang, J., Fang, Y., & Lin, W. *Prune With Confidence: Uncertainty-Calibrated Token Selection for Vision-Language Models.* IEEE ICIP 2026 Workshops on Coding for Machines, 2026. (Best Paper Award Runner-Up)

Zhu, H.*, **Fu, J.***, Zhang, X., Wang, J., & Lin, W. *RobustPruner: Decoupled Relevance and Uncertainty for Efficient Visual Token Pruning in Multimodal Large Language Models.* Accepted at **NeurIPS 2026**, worked as co-first author.

HONOURS & AWARDS

Dean's List, CUHK-Shenzhen	2024, 2025, 2026
Undergraduate Research Award, CUHK-Shenzhen	2025, 2026
First Prize, South China Region, National College Computer Capability Union	2025
Third Prize, Provincial Level, Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM)	2024, 2025
Outstanding Report Award, 15th Financial Investment Planning Competition	2025

SKILLS & INTERESTS

Programming: Python, C++, SQL, R, MATLAB, NoSQL, Assembly

Libraries & Tools: PyTorch, Tensorflow, Transformers, MySQL, MongoDB, kafka, Git, Linux, uiautomator2, Codex

Languages: Mandarin Chinese (Native), English (Fluent)

Interests: Swimming, Electronic music, Round-the-world Traveling