

Leon Zhou

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Education

Columbia University

Masters of Science in Computer Science, 4.00/4.00

New York, NY

Sep 2023–May 2024

Thesis: Self-Supervised Prompt Injections to Defend Large Language Models Against Jailbreak Attacks

Columbia University

Bachelor of Arts in Mathematics and Data Science, 3.87/4.00

New York, NY

Sep 2020–May 2023

Relevant Coursework: Artificial Intelligence, Probability, Causal Machine Learning, Databases, Algorithms, Computational Learning Theory, Stochastic Processes, Computer Vision, Differentiable Manifolds, Real Analysis

Skills

Programming: Python, C++, Java, Javascript, Hadoop, MapReduce, Docker, SQL, Haskell, R, Matlab

AI: Natural Language Processing, OCR, Computer Vision, Pytorch, Langchain, Kubernetes, AWS

Experience

Reality Defender (YC 22)

Data Engineer - Python, AWS, Terraform, Docker

New York, NY

Sep 2024–Present

- Built an end-to-end ML deployment pipeline to support **Deepfake detection** training on voice and video
- Delivered 15+ independent voice/video-generation models standardized through **Docker** containers hosted on **AWS** servers, generating over 150,000+ samples monthly for ML training

IDEA Research

Machine Learning Engineer Intern - Python, Langchain, LLM

Shenzhen, CN

Jul 2023–Aug 2023

- Engineered and published Tool-using LLM framework to interface with **RAG** models and quantitative trading software, generating 10,000+ syntax-specific alphas to improve financial factor mining speed by 20x
- Developed automated **pipeline** utilizing OCR to parse stock indices stored in **MongoDB** from financial reports, increasing work efficiency by saving 500+ hours of manual parsing monthly

Goldman Sachs

New York, NY

Software Engineer Intern - Java, Python, SQL, Hadoop

Jun 2022–Aug 2022

- Enhanced the **Knowledge Graph** of Goldman Sachs by combining multiple data sources in one massively **distributed** multivariate graph and applying **graph-theoretic**, machine learning and **natural language processing** tools for insights
- Created a new signal based on physical proximity of employees to enhance relationship understanding among colleagues in the Pythia Knowledge Graph using **Hadoop**
- Researched and deployed **unsupervised** machine learning algorithms to cluster and **classify** over 100 billion relationships

Ahi Fintech

Beijing, CN

Software Engineer Intern - C++

Jun 2017–Aug 2017

- **Scrapped** web data and compared with reported data to discover inconsistencies, pinpointing customers with incorrect credit ratings through **supervised** learning models, including **Logistic Regression**

Research

Axel Lab (Columbia Zuckerman Institute)

New York, NY

Research Assistant

Mar 2022–Jun 2022

- Led automation for preprocessing and motion-correction of fluorescence microscopy data across motion-correction in **Matlab**, and **CNMF-E** algorithms in **Python** to save 25+ hours of manual work weekly
- Ran experiments to discover the brain circuitry underlying curiosity and information gathering in hundreds of mice
- Deployed **Convolution Neural Networks** with **Pytorch** to identify neural activation of real cells using traces

Publications

Alpha-GPT: Human-AI Interactive Alpha Mining for Quantitative Investment: <https://arxiv.org/pdf/2308.00016.pdf>

Fungi, Trash, Bikes, and Wordle: Remembrance of Models Past: Joint Mathematics Meeting 2024

Interests

Interests: Percussion, Rock Climbing, WKCR Radio, Film Photography, Rowing, David Bowie, Philosophy, Chess