

# Leon Zhou

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## Education

### Columbia University

*Masters of Science in Computer Science, 3.93/4.00*

**New York, NY**

*Expected 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 Theory, Causal Machine Learning, Algorithms, Computational Learning Theory, Stochastic Processes, Computer Vision, Differentiable Manifolds, Real Analysis

## Skills

**Programming:** Python, C++, Java, Pytorch, Javascript, Hadoop, MapReduce, SQL, Langchain, Haskell, R, Excel

## Experience

### IDEA Research

*AI Software Intern*

**Shenzhen, CN**

*Jul 2023–Aug 2023*

- Proposed and published novel framework for AI foundation models to interface with LLMs and quantitative trading software
- Applied Generative AI towards creating thousands of syntax-specific alphas for financial factor mining
- Developed automated pipeline utilizing OCR to parse stock indices from weekly financial reports

### Goldman Sachs

*Software Summer Analyst*

**New York, NY**

*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 MapReduce
- Deployed unsupervised machine learning algorithms to cluster and classify over 10 billion relationships

### Ahi Fintech

*Software Engineer Intern*

**Beijing, CN**

*Jun 2017–Aug 2017*

- Detected financial fraud in collaboration with banks and peer-to-peer lending services
- Discovered inconsistencies between reported and web-scraped data pinpointing customers with incorrect credit ratings through supervised learning models

## Leadership & Projects

### Mathematical Contest in Modeling (MCM)

*Presenter*

**New York, NY**

*Dec 2021–May 2023*

- Co-authored a paper predicting future distribution of guesses needed for Wordle, based on word entropy and statistical prediction of daily players
- Won 'Outstanding Winner' in the MCM, beating out 11,000 teams from 21 countries to achieve the MAA and INFORMS award

### Axel Laboratory

*Research Assistant*

**New York, NY**

*Mar 2022–Jun 2022*

- Ran experiments to discover the brain circuitry underlying curiosity and information gathering in hundreds of mice
- Deployed Convolution Neural Networks to identify neural activation of real cells using traces
- Led automation for preprocessing and motion-correction of fluorescence microscopy data

### UChicago Brainbridge Laboratory

*Research Assistant*

**Chicago, IL**

*Mar 2020–Sep 2021*

- Modified Avatar creation tool in JSON to test memorability of faces
- Analyzed participant data and tested hypothesis on differences between visual and memory recollection
- Presented poster of experiments including patients with prosopagnosia at the Vision Sciences Society conference

## Interests

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