James L. Wang

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Education

Columbia University | **Columbia Engineering** 2018 – 2022
Master of Science – Computer Science, Machine Learning Track Expected Spring 2022
Bachelor of Science – Computer Science, Applied Mathematics (minor) Expected Fall 2021

- **Relevant Coursework:** Machine Learning, Natural Language Processing, Computational Aspects of Robotics, Artificial Intelligence, Analysis of Algorithms, Simulation, Partial Differential Equations, Numerical Methods
- **Egleston Scholar:** Recognized as top 1% of Columbia Engineering applicants
- **Organizations and Activities:** Tau Beta Pi, Application Development Initiative, Columbia Organization of Rising Entrepreneurs, Engineering Student Council, Columbia Mentorship Initiative, Citadel Summer Invitational Datathon

Professional Experience

Software Engineer Intern | **Capital One** *Plano, TX | Jun. 2021 – Present*

Teaching Assistant | **Columbia University** *New York, NY | Sep. 2020 – Jun. 2021*

- 4-time Teaching Assistant for Deep Learning in Computer Vision, Linear Algebra, and Artificial Intelligence
- Grade assignments, attend weekly meetings, and lead recitation sections for class of 200 students
- Discuss recent conference papers for students' original final projects and assist with debugging code at weekly office hours and through virtual forums

Research Assistant | **Columbia University** *New York, NY | Jan. 2021 – Jun. 2021*
Principal Investigator: Prof. Carl Vondrick

- Developing methods for adversarial robustness in hyperbolic embedding representation space
- Formalized novel method for causal image classification, significantly outperforming other state-of-the-art methods
- Designed and executed experiments to test methods' performance relative to existing benchmarks

Software Engineer Intern | **Nemoulous Capital** *New York, NY | Jun. 2020 – Aug. 2020*

- Built tools and platforms for commodities hedge fund startup's core tech stack, bringing firm from zero to paper trading
- Architected and developed collection of data pipelines containing web scrapers in Selenium, data processing, and integrated with quantitative models and core execution engine in Airflow
- Designed, tested, deployed core risk management and strategy back-testing system

Quantitative Analyst Intern | US Securities and Exchange Commission *New York, NY | Aug. 2019 – Nov. 2019*

- Analyzed high-frequency trade blotter data to develop automated machine learning-based pattern recognition tool for market manipulation using Python
- Presented findings to compliance officials and integrated model into automated detection pipeline

Research Assistant | Memorial Sloan Kettering Cancer Center *New York, NY | Jan. 2019 – Jun. 2020*
Principal Investigator: Prof. Dana Pe'er

- Developed perceptron-based self-supervised models for latent space representation of spatially resolved single cell images to understand cancer cell gene express morphology
- Implemented and refined generative pipelines for content-aware image style transfer across cell imaging domains for downstream analysis

Publications

Causal Transportability for Visual Classification Nets. *Submitted to NeurIPS 2021*. Chengzhi Mao, **James Wang**, Hao Wang, Junfeng Yang, Elias Bareinboim, Carl Vondrick

Single cell profiling reveals novel tumor and myeloid subpopulations in small cell lung cancer. *Submitted to Cell.* Joseph M. Chan, […], **James Wang**, *et al.*

Skills

Languages: Python, Java, C/C++, SQL/PostgreSQL, HTML/CSS, LaTeX | **Terminal:** UNIX, Bash, Vim, Git
Frameworks/Tools: Pytorch, Tensorflow/Keras, Scikit-Learn, Git, AWS, Google Cloud, Flask, Node.js, React