

Patrick Peng

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EDUCATION

Brown University, 4.0 GPA

Providence, RI | 2021 – 2025

Sc. M. Computer Science, Sc. B. Applied Math–Computer Science

Relevant Courses: Interpretability of Language Models, Grad. Operating Systems, Parallel Computing on CPU/GPU Systems, Optimizing Deep Learning for Hardware Architecture, Statistical Neuroscience, Grad. Algorithmic Game Theory, Networks, ML, DL, Abstract Algebra

Lakeside School, 3.9 GPA

Seattle, WA | 2017 – 2021

WORK EXPERIENCE

YouTube (Google), Machine Learning Engineer (Community Discovery)

San Bruno, CA | Aug 2025 – Present

- Sole entry-level engineer on a 3-person recommendations team working on a C-suite-driven initiative to launch Posts on Shorts, modifying the full recs flow (creating novel nomination heuristics and models, developing new ranking formulas, designing infra) to support new content modalities
- Analyzed feasibility and design tradeoffs for a two-tower recs model tailored to Posts' smaller inventory and freshness goals, adapting existing techniques to optimize for Posts-specific engagement definitions
- Built and shipped the resulting model end-to-end (raw-log data pipeline, training/export, and recs-graph integration at serving time), lifting deeply engaged users on Posts by 12% globally
- Engineered and tuned new nomination heuristics for Posts on the Watch page, boosting engaged users by 32%

Citadel Securities, Quantitative Trading Intern

NYC, NY; Miami, FL | Jun – Aug 2024

- Built pricing models for ETF event volatility (rotation one) and greek-balanced portfolio positions (rotation two); developed tools analyzing implied correlation and modeling earnings realizations
- Competed in mock trading and related activities, using Python and quantitative research skills to develop strategy

Morgan Stanley, Technical Summer Analyst (Digital Banking and Lending)

NYC, NY | Jun – Aug 2023

- Decoupled a liquidity service from a mortgage service to enable independent deployment, migrated the liquidity service to the cloud, and benchmarked its performance against the on-prem baseline
- Architected a Splunk-based system for rapid error diagnosis across all Morgan Stanley Online services

Brown CS Dept, Teaching Assistant

Providence, RI | May 2022 – May 2024

Fall '22 – OOP; Fall '23 – Intro Systems; Spring '24 – Operating Systems

- Led weekly labs and office hours, built and maintained course websites, wrote curriculum and assignments in Java/C/Assembly, and mentored students across three semesters

PROJECTS AND RESEARCH

Weenix Operating System

Providence, RI | Jan 2023 – May 2023

- Developed a large portion of an OS kernel called “Weenix” for CSCI2670: Graduate Operating Systems: 9,000+ lines of C covering threads, processes, device drivers, the virtual file system interface, an underlying file system, and user address space management

EMG Research Project, Researcher (University of Washington Tacoma)

Tacoma, WA | Jun 2021 – Nov 2022

- Tested signal processing and data augmentation algorithms, then designed RNNs to predict finger movements from electromyographical signals

Musx, Creator, Researcher

Seattle, WA | Jun 2020 – Sep 2021

- Researched music-representation techniques and designed a token-based score format, then built and trained a Transformer from scratch in TensorFlow to compose music in the styles of famous composers — distilling it into a compact model for edge deployment on the web (musx.dev)

LEADERSHIP

Hack@Brown, Team Lead (Hardware)

Providence, RI | Sep 2021 – May 2024

Organized the annual hackathon, 400+ participants/year

Language: Fluent in Mandarin Chinese, intermediate Spanish

Interests: Music production, freeride skiing, biking, strategy games, baking