James Xu

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Education

University of Illinois Urbana-Champaign Champaign, IL
M.S. Computer Science, *The Grainger College of Engineering* Expected May 2027
B.S. Computer Science, *The Grainger College of Engineering* Expected May 2026
Coursework: Computer Architecture, Computational Linear Algebra, Computational Statistics, Artificial Intelligence, HFT Technologies, Data Mining, Data Visualization, Programing Languages & Compilers, Natural Language Processing

Experience

Stackline Seattle, WA
Software Engineer Intern & Co-Op Jun 2024 - Mar 2025, Jul 2025 - Dec 2025

- Architected a cloud-native data pipeline using Amazon S3 for cost-efficient storage and Apache Doris with materialized views, enabling high-performance analytics and reducing query times by 40% and cloud costs by 30%.
- Built a reinforcement learning agent using proximal policy optimization and LinUCB contextual bandits with Monte Carlo simulations, increasing marketing channel click-through rates by 15%.
- Developed a JavaScript-based online fingerprinting library deployed on AWS, generating over 12M records and 100 GB of data to enhance automated agent intelligence.
- Engineered a custom Chromium-based browser in C++ by integrating analytics from fingerprinting tools and reverse-engineered anti-bot metrics, improving system robustness and performance.
- Deployed Dockerized Webkit agents on AWS ECS/EC2, reducing process automation failure rates from over 50% to under 5%.

Amazon Austin, TX
Software Engineer Intern May 2025 - Jul 2025

- Designed and launched a full-stack React web application to streamline configuration migration by mapping internal APIs, improving system interoperability and reducing migration time.
- Developed a Java-based API to process 500 GB of logs daily with optimized CPU usage, caching critical data in DynamoDB for real-time access and analytics.

SoKat Baltimore, MD
AI/ML Engineer Intern May 2022 - Sep 2022

- Developed PyTorch-based computer vision and NLP models to analyze emotional sentiment, enhancing user experience in mental health applications.
- Secured a $250,000 grant in a national competition with over 1,300 applicants, earning a Phase 1 award as one of 30 selected companies for innovative Veteran suicide prevention solutions.
- Ensured AI/ML solutions complied with stringent security and privacy standards for classified environments, maintaining 100% regulatory adherence.

Projects & Awards

Projects

- Engineered a high-performance public exchange for the Quant @ Illinois Trading Competition, achieving 99% uptime and $\leq$6 ms latency on AWS, processing 200+ orders per second using C++ for backend and networking with a React frontend, and implementing atomic transactions with multithreaded I/O operations.
- Developed a TensorFlow-based machine learning model for fundamental analysis, generating accurate equity valuations to support investment decisions.
- Built a low-latency ($\leq 400\mu s$) automated arbitrage and market-making bot in C++ for event contracts, optimizing trading efficiency and profitability.

Skills

Languages/Libraries: Typescript, React, Python, C++, NodeJS, Java, Golang, PyTorch, Keras, scikit-learn, pandas, NumPy, SQL, WebKit, Chromium, HTML, CSS
Development Tools: AWS, Figma, Linux, Git, Agile Development, Chrome Devtools, Yarn, npm, Docker, Jira, Confluence, CI/CD Pipelines