

Ziheng (Jack) Chen

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Education

University of Illinois Urbana-Champaign (UIUC) Aug 2023 – Expected May 2025
Master of Science in Computer Engineering GPA: 4.00/4.00
University of Illinois Urbana-Champaign (UIUC) Aug 2019 – May 2023
Bachelor of Science in Computer Engineering (Highest Honor) GPA: 3.99/4.00
Teaching Assistantships: CS/ECE 374: Introduction to Algorithms (Fall 2023, Spring 2024)
Achievements: Ackmann Family Scholarship, I-Promise Scholarship, Top 5% in LeetCode Contests

Experience

Software Engineer Intern, StoneX Group – Chicago, IL Jan 2023 – June 2023

- Created a pipeline to benchmark prototypical commodity indices, paving the way for their potential product release
- Analyzed the profitability of commodity indices generated from 200+ expert-provided index configurations using historical prices, surpassing performance targets by 23.3% in 10-year total return with the highest-performing index
- Collaborated closely with marketing associates through simplifying and conveying complex index generation methods
- Accelerated benchmarking in Databricks by 3000% through optimization and parallelization, utilizing pandas and Python
- Streamlined Databricks workflow migration across different environments by automating with a Python script for CI/CD in Azure DevOps, eliminating manual processes and ensuring correctness in complex scenarios through rigorous testing

Data Engineer Intern, StoneX Group – Chicago, IL Aug 2022 – Dec 2022

- Integrated company-wide Okta authentication into an existing cloud application via deploying Envoy Proxy microservice
- Developed dynamic usage analysis dashboard in Splunk to provide associate usage and category-specific insights
- Optimized the data curation ETL pipeline for a data-serving application to cut loading time by 20 times to 5 seconds
- Utilized Docker and agile methodologies to ensure flexibility and adaptability throughout the entire project lifecycle

Data Engineer Intern, Ecolab – Saint Paul, MN May 2022 – Aug 2022

- Enhanced data integrity by profiling and identifying 201M invalid rows in Snowflake global sales history table
- Streamlined evaluation of data quality and usability by automating SQL query generation through Python and APIs

Projects

Traffic Risk Assessment and Mitigation – Autonomous Vehicles, Machine Learning, Safety Aug 2023 – Feb 2024

- Enhanced dependability of AVs in unfamiliar and accident-prone scenarios with innovative traffic risk assessment method
- Designed experiments to validate the proposed method using 30000+ trials in CARLA Simulator and real-world dataset
- Created parallelized data generation and testing pipelines and boosted efficiency by 200% using subprocess in Python
- Constructed 6000 unfamiliar scenarios from NHTSA pre-crash typologies and trained lightweight Reinforcement Learning Agents in PyTorch to preemptively brake using the traffic risk as an indicator, reducing accidents by 72.7%

LLM for Network Configuration – Large Language Models, Computer Networking Nov 2023 – Dec 2023

- Injected faults into network configurations based on common root causes and validated outcomes with Batfish
- Utilized GPT-4 Turbo to methodically detect and resolve network configuration errors, attaining a 70% accuracy rate without contextual information, and an 85% accuracy rate through in-context learning

Workout Logging Application – Web Programming, Full-Stack Development Oct 2022 – Dec 2022

- Created responsive workout logging web app with React and TypeScript, supporting user authentication via Firebase
- Designed MongoDB database and employed Mongoose for data synchronization, and deployed the application on Heroku

Leadership

ECE Graduate Student Advancement Committee Member, UIUC – Champaign, IL Aug 2023 – Present

- Organize events fostering graduate student networking and community engagement in the ECE Department
- Lead communication efforts with the ECE Department as a liaison for prospective graduate student visit days

Skills

Programming Languages: Python, C++, C, Go, SQL, JavaScript, TypeScript, Bash, Assembly, CUDA
Technologies and Tools: Git, Linux, Docker, Azure DevOps, Databricks, pandas, PyTorch, React, Node.js, MongoDB