

Ziheng "Jack" Chen

zihengchen2000@gmail.com | zihengjackchen.com | github.com/zihengjackchen | US Permanent Resident

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: ECE/CS 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
<ul style="list-style-type: none">Created a pipeline to benchmark prototypical commodity indices, paving the way for their potential product releaseAnalyzed 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 indexCollaborated closely with marketing associates through simplifying and conveying complex index generation methodsAccelerated benchmarking in Databricks by 3000% through optimization and parallelization, utilizing pandas and PythonStreamlined 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
<ul style="list-style-type: none">Integrated company-wide Okta authentication into an existing cloud application via proxy microservice deploymentDeveloped dynamic usage analysis dashboard in Splunk to provide associate usage and category-specific insightsOptimized the data curation ETL pipeline for a data-serving application to cut loading time by 20 times to 5 secondsUtilized 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
<ul style="list-style-type: none">Enhanced data integrity by profiling and identifying 201M invalid rows in Snowflake global sales history tableStreamlined 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
<ul style="list-style-type: none">Enhanced dependability of AVs in unfamiliar yet accident-prone scenarios with innovative traffic risk assessment methodDesigned experiments to validate the proposed method using 30000+ trials in CARLA Simulator and real-world datasetCreated parallelized data generation and testing pipelines and boosted efficiency by 200% using subprocess in PythonConstructed 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
<ul style="list-style-type: none">Injected faults into network configurations based on common root causes and validated outcomes with BatfishUtilized 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
<ul style="list-style-type: none">Created responsive workout logging web app with React and TypeScript, supporting user authentication via FirebaseDesigned 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
<ul style="list-style-type: none">Organize events fostering graduate student networking and community engagement in the ECE DepartmentLead 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