

Ziheng (Jack) Chen

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Education

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| 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

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| 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 deploying Envoy Proxy microserviceDeveloped 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

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| 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 and 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% | |
| Friction Model Improvement in CARLA Simulator – Autonomous Vehicles, Simulation | Sept 2022 – May 2023 |
| <ul style="list-style-type: none">Improved the realism of CARLA Simulator by refining the friction dynamics model as a function of weather parametersGenerated 8000+ vehicle traces in diverse weather, uncovering 300% more accidents due to improved friction modelAcquired expertise in modifying the perception, control, and planning modules in the CARLA Simulation platform | |
| Coffee4Life OS – Linux System Kernel, System Programming, Operating Systems | Mar 2022 – May 2022 |
| <ul style="list-style-type: none">Developed a functional 32-bit Linux kernel in C and low-level x86 AssemblySupported paging, RTC, keyboard, terminal, file system, system calls, context switching, and scheduling operations | |

Leadership

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| 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