

Yicheng Xia

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EDUCATION

University of Pennsylvania <i>M.S. in Computer and Information Science, M.S. in Scientific Computing</i> (GPA: 3.82/4.00)	Philadelphia, PA Aug 2021 – Present
Suzhou University of Science and Technology <i>B.E. in Built Environment and Energy Utilization Engineering, B.A. in English</i> (GPA: 3.7/4.0, ranked 1/68) Sep 2017 – Jun 2021 *Outstanding Graduate, Merit Student, China National Scholarship (Top 0.2%, highest scholarship given by government of China)	Suzhou, China

SKILLS

Languages: Java, Python, C/C++, MATLAB, SQL, HTML, JavaScript, CSS, L^AT_EX, Assembly, Verilog
Tools: Linux, Shell, AWS, Docker, Apache Maven/Hadoop/Spark, Django, MySQL, React, Node.js, PostgreSQL, MongoDB, OpenGL

EXPERIENCE

Teaching Assistant <i>University of Pennsylvania, Department of Computer and Information Science</i> <ul style="list-style-type: none">Hosted weekly office hours and graded homework for 100+ students in CIS 551: Computer and Network Security, CIT 582: Blockchains and Cryptography	Philadelphia, PA May 2022 – Present
Software Engineer Intern <i>Witness to Mass Incarceration Inc., E-Commerce Team</i> <ul style="list-style-type: none">Designed and built an e-commerce cloud system with interactive APIs and frontend interfaces on FigmaUsed Django for backend and PostgreSQL for database, then imported and processed 1K+ sellers' information to be searchableDeployed it on Heroku and supported admins, sellers, and customers with separated functions and responsive mobile viewsMaintained persistency and saved backend API calling by storing users from login to logout and using cookies for authentication	New York, NY May 2022 – Aug 2022
Research Assistant <i>Suzhou University of Science and Technology, Prof. Junqi Wang's Team</i> <ul style="list-style-type: none">Built a raspberry Pi human detection system and saved 49.15% full speed fan energy with designed image processing algorithmsPatent: <i>An Intelligent Demand-Oriented Ventilation Control System Based on Occupant Detection</i>. CN213365297U	Suzhou, China May 2020 – May 2021

PROJECTS

Forx News 🌐 📺 📺 <i>MySQL, AWS RDS, React, Node.js, Express.js, Heroku</i> <ul style="list-style-type: none">Built a restaurant review website with Yelp datasets of 20K+ entries that allow users to search, filter, visualize, and comparePreprocessed and decomposed restaurants, reviews, and reviewers data files into Boyce-Codd Normal Form (BCNF) tablesDesigned REST APIs to securely handle authentication, user, restaurant, review, reviewer, and analytics routesImproved complex queries to be up to 106.57% faster than original by multiple optimizations like creating optimal indicesAdded basic and 3rd-party (Google and Twitter) login methods and introduced Google Maps API for the navigation feature	Oct 2022 – Dec 2022
Mini Minecraft 🌐 📺 <i>C++, OpenGL (GLSL), Qt Creator</i> <ul style="list-style-type: none">Created an interactive 3D world exploration and alteration program like Minecraft with Qt CreatorAllowed players to fly, walk, and swim, place or break blocks, and generate user defined scenes by loading outside imagesDesigned shading animation algorithms for game scenes including day and night cycles, distance fog, water, and lavaImproved the terrain rendering efficiency to be 99% faster than original by rendering block chunks into multithreaded VBOs	Oct 2022 – Dec 2022
Search Engine 🌐 <i>Java, AWS EC2/S3/RDS, Berkeley DB, HikariCP, Apache Hadoop, Docker</i> <ul style="list-style-type: none">Implemented and deployed a search engine with distributed web crawlers, a TF-IDF indexer, PageRank, and web UI on EC2Developed a multithreaded crawler following the robots exclusion standard and allowed 30 workers to fetch documents parallellySet up Berkeley DB, S3, and RDS to transfer and validate 1M+ crawled documents and computed indices locally and on cloudCached PageRank and index, improving the inquiry performance to be 70% faster than original and the search time <1 second	Apr 2022 – May 2022
Spark Java like HTTP Server 🌐 <i>Java, HTML, Apache Maven/Log4j</i> <ul style="list-style-type: none">Built a multithreaded HTTP server with a thread-safe handler responding 1K+ simultaneous requests concurrentlyHandled various routes from requests with pattern matching for parsing and cookies and sessions for identification	Feb 2022 – Mar 2022
Multidimensional Analysis of the Effects of Climate Change 🌐 <i>Jupyter, pandas, ML libraries</i> <ul style="list-style-type: none">Analyzed relations between the global temperature and other data (accuracy >90% by random forest) with Scikit-Learn and used ARIMA model to predict and visualize global temperature changes in the next 20 yearsUsed AFINN and NLTK to do sentiment analysis with labeled Twitter posts and visualize the word frequency	Nov 2021 – Dec 2021

HONORS & AWARDS (SELECTED)

Meritorious Winner of 2020 Mathematical Contest in Modeling	Top 8% all over the globe
Mao Yisheng Science and Technology Award (Railway Education Star of Outlook Award)	Top 0.05%, only 2 winners from 3 colleges