YIZHI (ETHAN) HAO

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EDUCATION

Cornell University, New York, NY   May 2025
Master of Science in Information Systems | GPA: 4.018 | Merit Scholarship
Coursework: Algorithms and Data Structures, Web Development, Networked and Distributed Systems, Natural Language Processing, Applied Machine Learning, Computer Vision, Applied Data Science, Cloud Computing and Big Data.

Beijing Foreign Studies University, Beijing, China   Jun 2023
Bachelor of Management in Information Systems and Information Management | GPA: 3.93 | summa cum laude
Honors/Awards: Beijing Municipal Outstanding Graduate (Top 5%), Beijing Municipal Outstanding Thesis (**Top 0.5%**)

TECHNICAL SKILLS

Coding Languages/Software:	Python, Java, SQL, JavaScript, HTML, CSS, C, R, SPSS, Mplus, Stata, Minitab, GLPK, Git, Postman.
Frameworks/Platforms:	Next.js, React, Django, Django REST, SpringBoot, Spring Data JPA, Express, Vercel, AWS, Firebase.
Databases/Other Tools:	MySQL, PostgreSQL, Docker, Spark, Hadoop, Kafka, Vite, Webpack, PyTorch, Tableau, Cloudflare.

EXPERIENCE

Beijing Daxing International Airport Terminal, Administration Dept., Data Analyst Intern, Beijing, China   Oct 2022- Jun 2023
- Designed a **queueing theory**-based system to forecast passenger check-in wait time and facilitate terminal capacity management.
- Implemented **multiprocessing** to speed up the integration of the **KDE** curve 4x during queue length estimation.
- Developed and deployed backend algorithms using **Python/MySQL**, achieving real-time estimation every 10 minutes and overnight forecast of backlog status, covering 194 counters, 12,000+ outgoing flights, and 165,000+ passengers per month.

Lenovo, Solution & Service Group, Data Analyst Intern, Beijing, China   Jul 2022- Oct 2022
- Reviewed code, maintained Confluence document, and conducted testing of MARS (chipset inventory forecasting using **GLPK**), fixing bugs in linear programming constraints, and streamlining constraint matrix to reduce solution time by 40%.
- Used **Python/Cvxpy/GLPK** to develop Surface Mount Technology Optimization system demo (PCBA assembly planning).
- Implemented **genetic algorithm** using **Python/Geatpy** for Advanced Planning System demo. Modeled production scheduling problem into vehicle routing problem, solved by multi-objective mixed integer programming.

PROJECTS

Travel Planner   Spring 2024
Interactive trip planning application utilizing **Google Map Javascript API** with **vis.gl**, integrating **Places/Autocomplete/Routes API**s.
- **React** Front end with **Chakra UI** and **react-beautiful-dnd** for interactive components. Manage state via **Redux**/**Context API**.
- Utilized **Java SpringBoot** as the backend framework, and **Spring Data JPA** as **ORM** framework to manage the database.

Issue Tracker   Spring 2024
Issue tracking system allowing users to post and update issues in markdown format, built with **Next.js**, and deployed using **Vercel**.
- Used **Radix UI** and **tailwind** for front-end component, **React-Hook-Form** for form handling, **Zod** for schema validation, and **Prisma** as **ORM** framework for **CRUD** operations. Built **REST**ful API and used **Axios** and **TanStack Query** for data fetching.
- Configured **AWS EC2** to deploy **MySQL** database using Docker. Used **Sentry** for performance monitoring and error-tracking.
- Integrated **OAuth2.0** with **JSON Web Token**, delivering third-party login and optimizing user-login experience.

Equation OCR   Spring 2024
OCR application for converting equations into LaTeX code using **LLMs** and **NLP** techniques, specifically with **OpenAI GPT-4v API**.

StudyBud   Fall 2023
Social Learning Platform developed with **Django** and productionized via multi-container **Docker compose** on **AWS EC2**.
- Implemented Django view and template mechanics for user interface. Integrated **PostgreSQL** for database operations
- Utilized **Django REST Framework** for API communication. Configure **Nginx** to serve static files efficiently.

The Study of Industrial Internet Supply Chain Risk Based on Agent-Based Modeling and Simulation, (Python, SQL)   Fall 2023
Research implementing **ABMS** method to identify high-risk nodes in SCs, using **Taguchi** method to study factors affecting SC resilience.
- Utilized **Agentpy and Networkx** to construct Python modules simulating the firm's behaviors during SC disruption.
- Created a **parallel testing** process, achieving a 24x speed increase. Improved **MySQL** schema, reducing data redundancy by 60%.

Beijing Foreign Studies University Global Index 2021 – Global Intelligence Innovation Index, (R, Python)   Spring 2023
Research utilizing ML methods to determine the weight of the composite index, GIII, leading to 1 publication in a **peer-reviewed journal**.
- Built a spider to crawl employment data from LinkedIn, decreasing data collection time by 83%.
- Trained **K-means and Random Forest** models using **Sklearn** to yield impurity-based feature importance as index weight.

PUBLICATIONS

Ma, Xiaoyu; **Hao, Yizhi**; Li, Xiao; Liu, Jun; Qi, Jiasen (2023): Evaluating global intelligence innovation: An index based on machine learning methods. In *Technological Forecasting and Social Change* 194, p. 122736. DOI: 10.1016/j.techfore.2023.122736.

He, Zhou; **Hao, Yizhi**; Ma, Xiaoyu (2023): Research on Risk Identification and Resilience Factors of Industrial Chains and Supply Chains – Taking Industrial Internet Supply Chain as An Example. In 2023 Chinese Academy of Management Annual Conference.