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# He Zhou

## Software Engineer

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## EDUCATION

<b>Master of Science, Information Systems</b> <i>Northeastern University</i>	GPA: 4.0/4.0, Dean's Graduate Scholarship	<b>Sep 2021 - May 2024</b> Boston, MA, US
• Selected Coursework: Object Oriented Design, Data Structures and Algorithms, High-Performance Parallel ML and AI		
<b>Bachelor of Engineering, Landscape Architecture</b> <i>Huazhong University of Science and Technology</i>	GPA: 3.64/4.0, Graduate with Honors	<b>Sep 2011 - Jun 2016</b> Wuhan, China

## SKILLS

**Programming Languages:** Python, Java, JavaScript, TypeScript, C++, Kotlin | HTML, CSS  
**Frameworks:** React, Node.js, Express.js, Angular | Spring (Spring MVC, Spring Boot, Spring Security) | Flask  
**Databases & Tools:** SQL: MySQL, SQLite, PostgreSQL, NoSQL: MongoDB | Git, Jenkins, Heroku, Docker, AWS EC2  
**Others:** Wireframing: Axure RP, Figma, Adobe XD | Issue tracking: Jira | ArcGIS | Pop dancing ([tiktok.com/@helooophe](https://tiktok.com/@helooophe))

## EXPERIENCE

<b>Software Engineer Intern</b> <i>Siemens</i>	<b>Jul 2023 – Sep 2023</b> Chengdu, China
<ul style="list-style-type: none"><li>Developed the frontend for the Open Industrial Edge (OIE) Ecosystem at Siemens Industrial Software Global R&amp;D Center. Improved OIE's user experience of diagnostics and real-time info dashboard using <b>Typescript, Angular, WebSocket</b>.</li><li>Optimized OIE's API consuming performance by caching idempotent operations with <b>memoizee</b>. Coded automated unit tests using <b>Jasmine, Karma</b>, which enhanced test function coverage from 17% to <b>45%</b>.</li><li>Devised an AWS tool for the internal team, which improved account control and saved 40% time to launch, onboard EC2 instances. Designed APIs with Golang backend engineers and built the frontend from 0 to 1 with <b>Typescript, React, Redux</b>.</li><li>Built a <b>React scaffold</b> that standardized team coding practices and accelerated overall project kick-off time by 30%.</li><li>Created <b>5</b> interactive charts for the Competency Management project using <b>echarts, D3.js</b>, leading to a <b>23%</b> increase in user satisfaction of the Competency Assessment module.</li></ul>	
<b>Software Engineer Intern</b> <i>NIO (2<sup>nd</sup> largest smart electric vehicle manufacturer by revenue in China)</i>	<b>Jun 2023 – Jul 2023</b> Shanghai, China
<ul style="list-style-type: none"><li>Developed Customer Engagement module for a BI (Business Intelligence) web application at BI Group, which enabled data analysis from <b>6</b> dimensions in <b>400+</b> stores. This leveraged customer retention strategies for user operation specialists.</li><li>Constructed <b>SQL</b> queries dynamically based on user's selections and processed the query results using <b>Python, Flask</b>.</li><li>Implements caching for frequently executed and resource-intensive queries with <b>Redis</b>, which speeded up the average query response time by <b>60%</b>, thereby alleviating the load on the backend and database.</li></ul>	
<b>Cloud Software Engineer Co-op</b> <i>New York Life</i>	<b>Jan 2023 – May 2023</b> New York, NY, US
<ul style="list-style-type: none"><li>Developed <b>20+</b> user stories and fixing bugs for a cloud-native insurance planning and recommendation system at Digital R&amp;D Lab using <b>Java, Spring Boot</b>, which digitized advice and guidance processes for <b>23,000</b> financial agents.</li><li>Migrated report file storage from <b>PostgreSQL</b> to <b>Amazon S3 bucket</b> by modified related APIs, which offloaded the burden from the database, handled concurrent file retrieval more efficiently and reduced response time by <b>40%</b> on average.</li><li>Monitored AWS CodeBuild execution following personal Git pushes in an Agile team. Utilized <b>CloudWatch</b> alarms to respond to and resolve issues, sustaining incident-free deployments and contributing to a high-performing CI/CD pipeline.</li><li>Optimized API endpoints and centralized existing <b>API calls</b> with the frontend team using <b>JavaScript, Axios</b> following OpenAPI Specification (<b>OAS</b>), which improved code maintainability and led to a <b>10%</b> decrease in code duplication.</li></ul>	
<b>Technical Product Manager Intern</b> <i>NetEase Games (2<sup>nd</sup> video game publisher by revenue in China, 5<sup>th</sup> worldwide)</i>	<b>Feb 2021 – Jul 2021</b> Hangzhou, China
<ul style="list-style-type: none"><li>Planned features for AI-powered <b>3D virtual avatar</b>, voice interfaces, <b>chatbot cloud platform</b> services at Fuxi AI Lab.</li><li>Won <b>1st</b> place out of <b>8 teams</b> and gained Tourism Development Fund from Hangzhou government by scheming, launching the MVP version of Virtual Avatar Tour Guide <b>Android App</b> based on <b>Unity, React Native</b> for interactive screens.</li><li>Enhanced the travel chatbot's <b>accuracy rate</b> to <b>74%</b> by refining multi-turn conversation workflows with the NLP team.</li></ul>	

Projects are on the back side

## PROJECTS

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### Jobbify — job application tracking web application (full stack)

[GitHub](#)

- A **3-tier** architecture job application management system using MERN stack (**MongoDB, Express, React, Node.js**).
- Secured **REST APIs** with **JWT** for user authentication. Populated the database with mock data and tested on Postman.
- Implemented job CRUD, searching, filtering and pagination functions. Visualized data statistics with aggregation pipeline.

### Memie — meme sharing Android application (mobile, CodePath Group Project)

[Certificate](#) [GitHub](#)

- Spearheaded a **7-person** group to form project aims, user cases, database schema and networking from 0 to 1 in **3 weeks**.
- Achieved **2 milestones** by building register, login, and gallery calling features using **Java, Kotlin** with **Android Studio**.
- Set up the parse server on Back4App and managed User, Post, Collection data CRUD using **MongoDB**.

### Chatible — real-time chat web application (backend)

[GitHub](#)

- A live chat room application built with **Python, Django, WebSocket** (using Django Channels), **Tailwind CSS, Docker**.
- Enhanced scalability by incorporating **Redis** as a channel layer and message broker to distribute tasks executed by **Celery**.

### Eazy School — school management portal web application (backend)

[GitHub](#)

- A school management system with student & admin portal using **Java, Spring MVC, Spring Boot**, and AWS **MySQL**.
- Setup role-based access and secured **REST APIs** using **Spring Security**. Monitored the app with **Spring Boot Actuator**.
- Operated students, courses, messages ORM with Spring Data **JPA, Hibernate**. Implemented CI/CD using **Travis CI**.

### Order Management Streaming Microservices Application (backend)

[Google Cloud Badge](#)

- Persisted events into Kafka by producing records that represent customer orders using **Java, Kafka Streams**.
- Joined **streaming** order information with payment information and customer data. Defined one set to criteria to filter and branch records. Created a session window for **distributed processing** and a state store for the Inventory Service.
- Created a persistent query which enriched the orders stream with customer info using a stream-table joined with **ksqlDB**.