

Enze Shi

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EDUCATION

Duke University

Master of Science, Electrical & Computer Engineering, **Software Engineering**

Durham, NC

Aug 2022 - Dec 2023

Pennsylvania State University - University Park

Bachelor of Science, **Computer Science**; Minor in Mathematics

State College, PA

Aug 2018 - May 2022

SKILLS

- **Programming Languages:** Python, TypeScript, Java, Swift, C, C++, JavaScript, Go, Shell, HTML5, CSS3, Markdown, JSON
- **Databases:** SQLite, MySQL, MongoDB, PostgreSQL
- **Frameworks and Tools:** Django, React.js, CI/CD, Docker, AWS, Kubernetes, OpenShift, podman, maven, Unit test (with mockito), Prometheus, AlertManager, Grafana, AWS EC2, AWS EKS, Bootstrap5, jira, RESTful API, Agile, Scrum, KanBan, XML

WORK EXPERIENCE

TikTok Inc.

Bellevue, WA

Software Engineer (Site Reliability Engineer - Recommendation Infra)

Jan 2024 - Present

- Engineered a resource management system for core Recommendation Infrastructure to ensure stability in high-concurrency scenarios using **Python, TypeScript**.
- Designed and implemented a Resource Quota subsystem using **Django, React.js**, automating budgeting, business inventory, reducing budget overruns by 29%.
- Spearheaded enhancements to the Resource Allocation Platform by automating requests and approvals, cutting response time by 40% and reducing operational costs.
- Developed real-time monitoring and visualization dashboards using **D3.js** and **Grafana**, providing comprehensive insights into resource usage and enabling instant identification of shortages within seconds.
- Handled on-call shifts for the online ranking service and optimized resource utilization through dynamic load balancing, saving 8448 CPU cores and improving system response time by 37% (p99 latency).
- Mentored interns and led cross-team collaboration for the handoff of recommendation system resource management, ensuring smooth transitions and improving workflow efficiency.

INTERNSHIP

Hirebeat Inc.

New York City, NY

Software Development Engineer Intern (Python, JavaScript, Django, React.js)

May 2020 – Sep 2020

- Delivered client solutions to job-seekers and recruiters by developing a web platform using Python, JavaScript, HTML, CSS, and PostgreSQL database.
- Constructed a highly reusable and cross-browser compatible RESTful client entry system in JavaScript using React, Redux, and Bootstrap4 frameworks, boosted the new user increasing rate by 30%.
- Enhanced functionality by implementing new features, such as billing, client profile management, and email verification, in Python using the Django framework with the model-view-controller (MVC) architecture.
- Improved the interview training experience by creating and overseeing a comprehensive PostgreSQL and AWS-powered database, currently hosting over 5000 recorded videos/audios, catering to a vibrant community of over 1000 active users.

PROJECTS

Campus Map (Swift, MapKit, UIKit, CoreLocation, CloudKit, CoreData)

- Developed a multi-platform project using Swift applied with Model-View-ViewModel (MVVM) architecture to enable users to familiarize themselves with the campus layout.
- Implemented features to enable users to search for a specific location on the campus map and navigate to it in estimated time.
- Built a cloud-based database to store user's preferences and statistics.
- Implemented a todo list feature in priority hierarchy to help users to organize their visit.

Online Campus Bookstore (Python, Javascript, HTML5, CSS3, Django, SQLite, Bootstrap4, jQuery)

- Designed and developed a full-stack database-backed web application that allows users to order books from the campus bookstore in Python with Django Framework.
- Built an admin dashboard to allow users to manage the bookstore inventory and orders.
- Implemented a shopping cart feature to allow users to preserve their orders and checkout in one session.

File System Implementation

- Designed and developed a file system implementation with dynamic storage functionalities (including allocation, deallocation, and file system metadata) in C language.
- Built a device driver, which sat between virtual applications and virtualized hardware device, to enable the system to handle multiple files and devices in a client-server architecture.
- Developed core functionalities for the file system including malloc, calloc, realloc, free.