Enze Shi

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EDUCATION

Duke University   Durham, NC
Master of Science, Electrical & Computer Engineering, **Software Engineering**   *Aug 2022 - Dec 2023*

Pennsylvania State University - University Park   State College, PA
Bachelor of Science, **Computer Science**; Minor in Mathematics   *Aug 2018 - May 2022*

SKILLS

- **Programming Languages**: Python, TypeScript, Swift, Java, 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
Site Reliability Engineer - Recommendation Infrastructure (TypeScript, Python, React.js, Django, Grafana, Aeolus)   *Jan 2024 - Present*
- Engineered a robust resource management system pivotal to enhancing the TikTok Recommendation Infrastructure's operational efficiency.
- Designed and implemented the Resource Quota Subsystem using Python, TypeScript, and Aeolus, orchestrating streamlined allocation of business inventory, budget, and available resources, effectively optimizing management processes and reducing budget overruns by 17%.
- Developed the Resource Application Platform in Django and React.js to enhance system responsiveness during critical incidents and optimize user interactions, resulted in a 30% reduction in average response time during on-call incidents.
- Constructed the Resource Inspection Dashboard leveraging Django and React.js, providing real-time visualizations of resource delivery and usage which helped identify and mitigate resource shortages in under 5 minutes.

INTERNSHIP

Duke University   Durham, NC
SSI Systems Engineer Intern - Kubernetes Operations (Python, Kubernetes, Prometheus, Grafana)   *June 2023 – Dec 2023*
- Successfully migrated Linux@Duke Mirror to new Kubernetes clusters with zero service interruptions and minimal impact on user access, adapting existing container definitions for a seamless transition.
- Enhanced Kubernetes monitoring by customizing Prometheus queries and alerts, reducing false positives by 47% and improving critical issue identification for increased system reliability and reduced downtime.
- Explored and evaluated application deployment strategies, such as canary releases, blue-green deployments, and rolling updates, in Kubernetes to facilitate smooth updates and minimize user impact.

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

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.

Campus Map (Swift, MapKit, UIKit, CoreLocation, CloudKit, CoreData)
- Developed a multiplatform 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.

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.