Kobe Shi

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Education

University of Michigan — Ann Arbor, MI

Bachelor of Science in Computer Science — *Aug 2020 – Apr 2023*

Clubs: WolvSec - Cybersecurity, WolvSoft - Game Development, MHackers - Professional Development

Relevant Coursework: Data Structures and Algorithms, Computer Architecture, Theory of Computation, Game Design and Development, Software Engineering, Operating Systems, Web Systems, Introduction to Computer Security

Technical Skills

Languages & Frameworks: C/C++/C#, Python, R/R-Studio, SQL, HTML/CSS/JavaScript, Xml, Xaml, WPF, Unity, ReactJS, Flask, Jinja2, MapReduce - Hadoop, Assembly, bash, JSON, Markdown, LaTeX, Cypress, SAFe

Skills: OOP, Distributed Systems, Multi-Threading, TCP/UDP, Pipelining, REST API, Data Structures & Algorithms

Tools: VS/VSCode, Git, Docker, Ghirda, Wireshark, Linux, Jira, Amazon Web Services, Azure Devops/TFS

Work Experience

Hexagon - Asset Lifecycle Intelligence — Huntsville, AL - Remote

Software Developer - Full Time — *July 2023 – Present*

- Contribute towards the development of Smart3D (S3D), a large-scale 3D modeling software, while acquiring experience in 3D modeling, through rigorous training, testing, and development.
- Dedication to the development, testing, and debugging of S3D's Rules Configuration Manager in order to deliver tailored solutions to customers, improve the end-user experience, and align with overall industry standards.
- Utilized many tools in the development of S3D, such as C++/C#, WPF, Xml, Xaml, TFS, Visual Studios, and concepts such as OOP, while incorporating Scaled Agile Framework (SAFe) in the development process.

Costco, Pittsfield Township — Ann Arbor, MI

Front End Assistant - Part Time — *Sept 2021 – Apr 2023*

- Accrued invaluable experience in leadership, teamwork, and effective communication through routine work, and fostered relationships with not only my colleagues but members of Costco as well.

Projects

Search Engine - (HTML5, Python3, REST API, MapReduce, Pipelining, Multi-Threading) — Apr. 2023

- Built a scalable search engine while incorporating information retrieval concepts such as text and link analysis.
- Created segmented inverted index of web pages using MapReduce and Pipelining, while utilizing threads to scavenge through the populated segmented inverted indexes.
- Built an index server and a REST API application that returns search results in JSON in order to create our search server that returns our desired search results.

Instagram - Clone (HTML5, Javascript, Python3, SQLite, React, AJAX, Flask, REST API) — Feb. 2023

- Built a clone of Instagram that incorporates both server-side and client-side dynamic pages and a REST API.
- Utilizes ReactJS and AJAX calls to the REST API for client-side dynamic pages.
- Created a simple shell script that mass inserts data into the SQLite database in order to simulate users.
- Implemented pagination in the REST API to allow for dynamic infinite scrolling.
- Deployed website using Amazon Web Services (AWS) EC2 Ubuntu instance.

Network File Server (C++, Multi-Threading, Distributed System) — Nov. 2022

- To understand file-systems, socket programming, client-server systems, and security protocols, we implemented a multi-threaded, secure network file server, that allows clients to interact with it via network messages.
- Incorporates threads for concurrency between clients. A thread is created per client that connects to the server.
- Utilizes hand-over-hand locking to prevent data hazards between files.

Thread Library (C++, Multi-Threading, Kernel, RAII) — Oct. 2022

- Re-implemented a Thread library, in C++, with a 4 class interface, cpu, mutex, cv, and thread, to understand how threads and monitors are implemented on uni-processor and multi-processor systems.
- To ensure atomicity, we manipulated interrupts and implemented a timer-based interrupt system, that generates interrupts periodically and is managed by an RAII abstraction.