Jake Lee

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EDUCATION

Rice University   Houston, TX
Bachelor of Science in Computer Science, Minor in Data Science   *Aug 2022 – May 2026*
Courses: Data Structures & Algorithms, Program Design, Computer Systems, Parallel Programming, Concurrent Programming, Machine Learning, Linear Algebra, Calculus, Differential Equations, Statistics

EXPERIENCE

Celanese Corporation   **May 2025 - August 2025**
Software Engineering Intern   *Houston, TX*
- Designed and implemented an enterprise-wide **Cognite Data Fusion** data model using **GraphQL** to record assets, asset properties, and attach real-time data. Lead a design review to ensure compliance with technical standards.
- Utilized **Python** to map **1600+ assets** to **1400+ properties** to get **8700+** unique combinations in the **Cognite Data Fusion** data model that were hydrated with live field data, resulting to **18% more efficient queries**.
- Designed a dashboard template to monitor equipment health that can be modified for **800+** equipment types. Displays real-time readings and metrics, historical trends and data patterns, and interactive equipment diagrams.
- Engineered a working dashboard prototype for **20** equipment. Utilized a **Python Streamlit** frontend and **Cognite Data Fusion** backend with **Cognite SDK** for API calls with **Plotly** and **Pandas** to format and present data.

Rice University Computer Science Department   **August 2023 - December 2024**
Teaching Assistant: Computational Thinking   *Houston, TX*
- Assist students on **Python** programming, search algorithms, basic data structures, mathematical computations. Supported the development of critical thinking skills and problem solving skills in computational thinking.
- Host weekly office hours, grade problem sets and exams for **25+** students, answer students' questions, and facilitate academic success. Attend weekly meetings with the professor to discuss course curriculum, planning, and grading.

Plutus Global Inc   **May 2024 - August 2024**
Software Engineer and Operations Planner   *San Diego, CA*
- Developed a fully functional prototype of a professional ecommerce website using **React.js** and **HTML/CSS**. Hosted on Vercel and implemented with **Tailwind, Globe.gl, React-Typed and Email.js** libraries.
- Assisted in daily operations such as client emails, production and delivery schedules, and managed PO/invoices. Communicated with **5** different business partners to plan future business operations.

PROJECTS

COMP 318 Concurrent Program Design | *Golang, HTML/CSS, Typescript*
- *OwlDB Document Database*: Engineered a **NoSQL**-structured document database with **RESTful API** services using **Golang**. Supported concurrency use cases to create, update, delete, retrieve, and query **JSON** documents.
- *OwlDB M3ssag1n8 App*: Engineered a web-based messaging application using **HTTPS/CSS, Typescript** as the frontend with OwlDB as backend, supporting dynamic messaging with multiple spaces and channels, like **Slack**

Memory Allocator | *C*
- Designed and programmed a dynamic memory allocator to replicate **C**'s internal memory structure.
- Used segregated linked lists, a "last in, first out" (LIFO) policy, and list traversal algorithms to optimize memory allocation by maximizing throughput and minimizing space utilization.

Yerin Baek Fan Page | *HTML, CSS, Javascript, JQuery*
- Designed a website about one of my favorite artists, Yerin Baek, her discography, and other related events.
- Utilized basic **HTML/CSS, JavaScript, jQuery** for building the website and **Github Pages** to host it.

TECHNICAL SKILLS

Languages: Python, Java, C, HTML/CSS, JavaScript, TypeScript, Golang, SQL, R, GraphQL
Frameworks: React, JUnit, Tailwind, Hadoop, Apache Spark, Cognite Data Fusion, Streamlit
Libraries: NumPy, Scikit-learn, Pandas, Matplotlib, Ggplot, Plotly
Developer Tools: Git, Github, VS Code, IntelliJ IDEA, RStudio, Azure DevOps, Jupyter Notebook