Xinyun Liu

https://zxqlxy.github.io/

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Education

- **Rice University** — Houston, TX
  Master of Science in Computer Science — *Aug. 2021 – Dec. 2022*
- **Rice University** — Houston, TX
  BA in Computer Science, BS in Physics — *Aug. 2017 – May 2021*

Experience

- **Filegpt, an LLM-based App** — Bellevue, WA
  Tech Lead — *March 2022 - Present*
  - Led the development of FileGPT, an **LLM**-based App for interacting with contents from multiple formats.
  - Integrated database(**postgres**) pooling, load balancers, and message queues (**Redis**) to ensure high scalability, availability, and smooth operation during peak usage.
  - Monitored multiple servers, dockers, and databases for any problems and supported more than **5000 registered users** and **hundreds** of paying customers.
- **Meta** — Menlo Park, CA
  Backend (Product) Software Engineer — *May 2022 - Aug. 2022*
  - Optimized indexing efficiency by skipping in-memory data ingestion and data compaction in **RocksDB**
  - Developed user-friendly configurations and CLI for spark map-reduce using **C++** and **thrift**
  - Monitored data consistency and indexing performance, and migrated the change to over 14000 use cases
  - Reduced the disk I/O by 60% time, saving tens of hours per run and millions of dollars in server fee per year
- **CertiK** — New York, NY
  Full-stack Software Engineer Intern — *Sept. 2021– Dec. 2021*
  - Maintained company website in **Next.js** and ran unit tests and integration tests in **Cypress** with mocks
  - Made the website to production with the ability to audit crypto transactions
- **Solar Physics Research Group, Rice Space Institute, Rice University** — Houston, TX
  Undergraduate Researcher — *Aug. 2019 – Aug. 2021*
  - Automated the pre-processing of hundreds of gigabytes of data, and fed them into **AWS**.
  - Built an app that can visualize data and monitor the machine learning process that uses gigabytes of data
  - Designed machine learning model to tackle both classification and prediction problems in solar physics (Densenet, **GAN** and YOLO)
  - Used **CUDA** to better utilize the power of GPUs and refactored the code to parallelize the computation

Selected Projects

- **Ricebook - Web based social media project** Designed a multi-user full-stack web social media, with registration, posting, commenting, and connecting.
- **Database System** Developed a SQL database system with **LRU** cache management, page/record handle, TPMMS sorting algorithm, SQL compilation/optimization which optimizes using B+ tree and enables parallel SQL queries.
- **Network Protocals** Developed a **TCP**-like reliable file transfer and intra-domain routing protocols for optimal data delivery across servers
- **Linux-based Operating System** Built a full-fledged Linux-based operating system with the kernel, file system, and terminals.
- **High-Performance CPU** Developed a CPU having branch prediction, hazard handling, register renaming, out-of-order execution, 2 levels of cache, and MESI cache coherence protocol written in **C** and **Verilog**.

Technical Skills

Languages: C/C++, Python, Javascript, Node.js, HTML/CSS, React, Next.js, Node.js, Verilog, Java, SQL
Technologies: AWS, Google Cloud, Azure, Linux, Nginx, TCP/IP, Kubernetes, Heroku, Cypress, Kafka, Redis, Postgres, MongoDB, Django, Git, CMake, NPM, CUDA