

Long Tran

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EDUCATION

Rutgers University

New Brunswick, NJ

B.S in Computer Science | GPA: 3.95/4.00

Dec 2023

Ph.D in Computer Science

September 2024 - Present

Relevant Coursework:

Operating Systems, Distributed Systems, Algorithms I & II, Intro to AI, Information & Data Management

TECHNICAL SKILLS

Languages: C/C++, Python, Bash, Java(Script)

Frameworks: Pytorch, Tensorflow, Jupiter Notebook, SQL, Docker, Kubernetes, Grafana, Prometheus

Developer Tools: Git, Linux, Bash, Vim, AWS, CI/CD

EXPERIENCE

Rutgers University - New Brunswick | New Brunswick, NJ

Research Assistant

September 2023 - Present

- Research runtime performance of concurrent Computing and I/O intensive applications: Pytorch, RocksDB.
- Research carried out as part of the **Rutgers Sytems Research Lab**, advised by **Prof. Sudarsun Kannan**.

Research Assistant

May 2023 – December 2023

- Designed an experiment to tackle Linux's memory swapping bottleneck performance, and identify premature signals of the bottleneck to prevent catastrophic computation performance on Tensorflow object detection (AI/ML) models using Docker.
- Expanded datacenters' monitoring system using Prometheus, Grafana by adding 12 system-level micrometric.
- Increased runtime performance by 33% of wild-fire detection AI/ML model by deploying distributed training model on Tensorflow, and testing different batch sizes.

Software Developer

June 2022 - September 2022

- Renovated REHAB's research lab database from MS Excel to MS Access software.
- Designed interactive UI/UX for querying 1500+ user personal info using MySQL queries.
- Increased 65% database performance by migrating 2000+ data rows to Microsoft Access Database.
- Allowed 5+ concurrent users by launching a centralized database replication.

SiGlazVN | Ho Chi Minh City, Vietnam

March 2021 - May 2021

Software Developer Intern

- Redesigned mobile home pages using C#, reduced homepage load time by 72% implementing lazy loading.
- Delivered mobile inbox notification feature on iOS, Android app using cross-platform framework in C#, increased promotion campaigns' reachability towards in-app users by 66%.
- Implemented 400+ unit test cases on .NET RESTful API, decreased in-deploy errors by 58.3%.

PROJECTS

Online Gomoku Server with AI Bot | C/C++

- Designed multi-threaded server with custom-written communication protocol for Tic-tac-toe game in C
- Allowed 5+ concurrent games and handle player's interruptions for surrender, sudden program exit.
- Launched an AI bot with 70% win-rate over human using a min-max tree algorithm to play on 20x20 version of tic-tac-toe, boosted algorithm execution time by 89% using alpha-beta pruning and bit-hashing approximation heuristics.

User-space Virtual Memory & Virtual File System Library | C

- Developed user-friendly API supports efficient memory management using virtual memory techniques.
- Empowered user launch their own file directory on one Linux file by implementing FUSE virtual file system.

Movie Recommendation System & Remote Key-value store Interface | Java

Spark

- Designed a remote key-value storage service on application layer using TCP protocol.
- Implemented a recommendation service that can analyze 100m rows of movie data using Java Spark