Seth Nye

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EDUCATION

Georgia Institute of Technology, *College of Computing* December 2024
M.S Computational Science and Engineering, GPA: 3.85

University of Georgia, *College of Computing* December 2022
B.S Computer Science w/ Honors, GPA: 3.97

TECHNICAL SKILLS & RELEVANT COURSEWORK

Languages: Python, C/C++, Java, JavaScript, HTML/CSS, SQL (MySQL)
Frameworks: React, Node.js, Express, JUnit
Developer Tools: Git, Docker, GDB, VS Code
Libraries: Pytorch, Pytorch Geometric, Scikit-learn, Sci-Py, Pandas, NumPy, Matplotlib
Coursework: Systems programming, data structures, algorithms, computational data analysis, deep learning, graph machine learning, modeling and simulation, discrete optimization, distributed computing systems, cyber security, high-performance computer architecture, computer networks, database management

PROJECTS

AI for Protein Function Prediction, *CSE8803 - Graph Machine Learning* | Project Link Sep 2023 - Dec 2023
ML Developer | Tools: Python, Bash, Linux, Pytorch, Git
- Developed a graph convolutional neural network for the prediction of protein functions which is expected to reduce discovery costs significantly.
- Adapted a Tensorflow model to utilize PyTorch improving the runtime by 32% and achieving comparable accuracy of 90.5%.
- Developed Python and bash scripts for a data pipeline to transform raw protein sequence data from the AlphaFold database into digestible graph data via multi-hot encodings and contact maps.

FTP Server & Client, *CSCI4780 - Distributed Computing* | Project Link Jan 2022 - Feb 2022
Software Engineer | Tools: Java, Unix, Git
- Led a team of 3 to develop a multithreaded file transfer protocol server and client, ensuring project workstreams remained on track and on-time completion.
- Implemented concurrency and maintained data integrity during critical sections by leveraging thread-safe logic and synchronization.
- Deployed and tested servers/clients on Unix computing clusters.

Multicast System, *CSCI4780 - Distributed Computing* | Project Link Feb 2022 - Mar 2022
Software Developer | Tools: Java, Unix, Git
- Built an asynchronous multicast messaging service (similar to WhatsApp) with temporally-bound persistence.
- Implemented multi-threading and offline support for communication with subscribed clients on different servers to ensure users can receive messages in the order and time in which they were sent when coming back online.
- Initiated production testing of coordinator/subscribers on Unix computing clusters.

Cache Simulator, *CS6290 - High Performance Computing Architecture* Feb 2024 - Mar 2024
Software Developer | Tools: C++, Bash, Linux, GDB, Docker
- Developed a cache simulator to test various cache configurations used in modern high-performance computer architecture without having to spin up costly production resources.
- Simulated cache using a driver program with trace files and measured results by tracking cache hits and misses to accurately calculate efficiency.
- Utilized a bash script to automate the sequence of experiments with different cache configurations, completely eliminating the need to manually run each test.

WORK EXPERIENCE

University of Georgia **Athens, GA**
Teaching Assistant Sep. 2022 – Dec. 2022
- Held dedicated office hours to assist over 500 students in learning data structures, algorithms, and Java best practices.
- Developed grading scripts for student projects in Java with JUnit on a Unix operating system, reducing manual efforts by 80%+.