Justin M. Garrigus

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Education

Masters of Science, Computer Science: January 2023 - December 2024 (University of North Texas)

- GPA: 3.875
- Thesis: Reducing the Amount of Duplicated Values in the GPU L2 Cache during Lowered Convolution (in progress)
- Coursework: Computer Architecture, Deep Learning, Computer Security, Parallel Processing

Bachelor of Science, Computer Science: August 2020 - December 2022 (University of North Texas)

- Magna Cum Laude; GPA: 3.96
- Thesis: Syntax as a Tool of Thought
- Coursework: Software Engineering, Systems Programming, Natural Language Processing

Technical Profile

Languages: C (advanced), C++ (advanced), CUDA (advanced), Python (advanced), Bash (advanced), Javascript (intermediate), Java (intermediate), C# (intermediate), SQL (intermediate)
Platforms: Linux (advanced), Windows (advanced), GPGPU-Sim (advanced), Docker (advanced), Git (advanced), Lonestar6 Supercomputer (advanced), databases (intermediate), Amazon AWS (intermediate)

Work Experience

Computational Materials Research Assistant: University of North Texas, May 2024 to current

- Created deep-learning systems with graph neural networks to analyze material properties.
- Used transfer learning on disparate datasets to improve performance across semi-related tasks.
- Trained expressive models and ablated distinct portions to prove the efficiency of each part.

Teaching Assistant: UNT, January 2023 to current

- Graded assignments and assisted students in learning class materials during office hours.
- Created new class materials and assignments that follow course objectives.
- Guided students in understanding complex subjects, crafting personalized educational content.

Computer Architecture Research Assistant: University of North Texas, May 2022 to current

- Implemented microarchitectural modifications to a Graphics Processing Unit (GPU) simulator.
- Compared the effects of hardware changes on performance, power, and utilization.
- Programmed in large projects with tens of thousands of lines of code.
- Collaborated with PhD students and professor to organize tests that demonstrate improvements.

Projects

Benchmark Suite for GPU Genomics: UNT Research, August 2022 to February 2023

- Formed a collection of genome-analysis GPU programs to demonstrate hardware efficiency.
- Analyzed each program with a GPU simulator, showing how hardware properties like register file size, communication latency, and cache size would impact overall performance.
- Refactored existing GPU programs with CUDA Dynamic Parallelism, improving utilization.