Emilio Mendoza Reyes

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INTERESTS

Low-Level Programming | Particle Simulations | High Performance Computing (CUDA)

WORK EXPERIENCE

Student Research Assistant - Clemson University   Sep 2023 - present

- Conduct research in collaboration with the Materials Science Department, specializing in the development and implementation of Kinetic Monte Carlo (KMC) simulations.
- Utilize Python programming language to design, develop, and optimize KMC algorithms tailored to specific materials systems.
- Analyze simulation data to extract meaningful insights and provide valuable contributions to ongoing research projects.

Calculus & Programming Tutor - Freelance   Aug 2021 - May 2023

- Provided personalized programming lessons to high-school students and undergraduate students.
- Provided personalized AP Calculus AB lessons to high-school students.

PROJECTS

CUDA Enabled Particle Simulator   Link to Demo | Link to Repo

An N-Body Newtonian gravity simulation written in CUDAC that can simulate around 40k bodies at once and still remain performant.

C Standard Library   Link to Repo

My own partial implementation of the C standard library. Interacts with the Linux kernel through syscalls and is meant to be statically linked. I made this to practice low-level programming.

Talk   Link to Repo

Decentralized key exchange and end to end encrypted messaging platform aimed at a post quantum future. Still a work-in-progress.

EDUCATION

2023 - present   Computer Science BS at **Clemson University**

SKILLS

Python Programming	Numpy, Scipy, PyTorch & Matplotlib
C/C++ Programming	CMake/MakeFile based workflows with modern (C23/C++23) features
CUDAC Programming	Writing performant CUDA kernel's for parallelizable tasks
Spanish Fluency	Fluent in both English and Spanish
LaTeX Programming	Proficient in utilizing LaTeX to craft polished documents.