Lis Dautaj

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github | linkedin

EDUCATION

Emory University   **Aug 2019 - Dec 2022**

Bachelor of Science - Mathematics & Computer Science   *Atlanta, GA*

SKILLS

Programming Languages   C++ | C | Python | Java | C# | MATLAB | MySQL | JavaScript | CUDA | Rust

Technologies/Frameworks   GitLab | Docker | Kubernetes | MongoDB | TensorFlow | Unity | PyTorch

EXPERIENCE

Software Engineer   **Jan 2023 - Apr 2023**

Emory Department of Computer Science   *Atlanta, GA*

- Led end-to-end maintenance of the Emorachat application, actively implementing project owner requests, developing new REST APIs, executing updates, and conducting rigorous testing.
- Adapted and extended existing C++ code architectures of the LifeV PDE solver library and perform regular bug fixes, using the GNU debugger.
- Enhanced and maintained the department's ARM simulator, resolving bugs in the Java desktop application and C/ARM compilers to ensure seamless usability for students.
- Led the successful migration from a monolithic backend system to a containerized microservices architecture using Kubernetes, enhancing scalability, flexibility, and system maintainability.
- Conducted integrated workload testing and data analysis with the Matplotlib Python library to assess Emorachat's infrastructure capacity.
- Implemented a Two-Factor Authentication system for enhanced security in EmoraChat, incorporating new APIs and frontend elements to fortify user authentication processes.
- Key contributor to the Vis4GRAD project, implementing a data visualization system for reviewer self-reflection, insightful analyses, and promoting gender and racial fairness in reviews.
- Supervised and mentored a team of student developers, assigning tasks aligned with their skill levels, providing guidance during challenging phases, and ensuring a supportive learning environment.

3D Visualization Assistant   **Aug 2020 - Dec 2022**

ECDS Digital Visualization Lab   *Atlanta, GA*

- Worked on creating a hyper-realistic 3D model of a 18th century slave ship, used in a documentary video shown at the Nantes Museum of Natural History.
- Developed C# scripts for the Unity Game Engine, enabling VR movement and navigation in the "Open World Atlanta" and "Envisioning Baroque Rome" web applications.
- Significantly improved team productivity and resource utilization by designing and implementing a Python script that enabled the procedural generation of intricate 3D models of houses and buildings.

Mathematical Modeling Trainee   **Jun 2021 - Jul 2021**

Georgia Institute of Technology   *Atlanta, GA*

- Implemented an agent-based model of Varroa mite infestation in honey bee hives based on biological research and mathematical modeling as part of the Emory team at the SCMB Modeling Accelerator program.
- Attended weekly lectures, showcases, and group meetings to learn more about agent-based modeling (ABM), current research applications of ABM, and Netlogo coding throughout six weeks.

NOTABLE PROJECTS

HOCA Operating System | *C, Assembly, GNU Debugger*   **Jan 2022 - May 2022**

- Delved into the intricacies of system-level programming by creating my own Operating System using C, implementing essential functionalities such as process management, memory allocation, and system calls.
- Gained insights into the core mechanisms that drive operating systems, demonstrating a deep understanding of low-level system architecture and design principles.

My 3D Rendering Engine | *C++, CUDA*   **Jun 2022**

- Created a custom 3D rendering engine from scratch, implementing core graphics functionalities, including rasterization, shading, and rendering pipeline stages.
- Optimized the graphics pipeline for real-time rendering performance by utilizing parallel processing and GPU acceleration techniques for enhanced speed.

PUBLICATIONS

- **Lis Dautaj**, Alexander Cors and Sara Kaplan "Atlanta in the 1920s – Making the Past come alive in the OpenWorld Atlanta Project" *2022 Atlanta Studies Symposium*, Atlanta, GA.