Daniel Arroyo

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Education

University of Wisconsin-Madison

Bachelor of Science, Computer Science
Bachelor of Science, Applied Mathematics
Exp. Graduation Date May 2020

Classes for Fall 2019-2020 Semester

- Computer Graphics (JavaScript, WEBGL, THREE.js, GLSL)
- Physically Based Modeling and Simulation (C++, USD)

Selected Projects

- Implemented *a material point method for snow simulation*.
- Created a cache simulator with LRU (least recently used) replacement policy
- Created a chat-bot using an N-Gram model
- Implemented various searching algorithms like BFS, DFS, IDDFS, Hill climbing, and Simulated Annealing to solve different problems in Artificial Intelligence related tasks.
- Implemented a Multi-Level Feedback Queue for scheduling processes in the xv6 operating system
- Implemented the MapReduce framework in C. Used the mapper and reducer functions for different tasks.
- Used Python and its libraries to create a map visualization of property sales in Milwaukee.

Programming & Software Skills

Programming Languages
- Java, C++, C, HTML, CSS, JavaScript, Python, SQL

Software
- USD, Linux (bash), Source Control and Git

Skills
- Object Oriented & Procedural Programming, Web Development, Unit Testing

Teamwork & Solo Experience

- Wrote a ray tracer that included diffuse and specular lighting for varying materials.
- Created 2D animations using HTML Canvas and JavaScript
- Have mathematically proved, implemented, and tested various algorithms from different paradigms like divide and conquer, greedy, dynamic programming, graph traversal, and network flow.
- Experience with program performance optimization.
- Worked with a partner on various operating systems programs such as adding kernel threads to the xv6 operating system

Relevant Coursework

- Data Structures and Algorithms - Intro to Algorithms - Intro to Computer Engineering - Machine Organization and programming - Discrete Mathematics - Multi-variable Calculus - Linear Algebra - Operating Systems - Intro to Artificial Intelligence - Data Science and Data Management - Applied Linear Algebra