Benjamin Porter

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Education

The University of Texas at Austin
B.S. in Computer Science
expected May 2021
Turing Scholars Honors Program
GPA: 3.59

Coursework

Current

- Artificial Intelligence (H)
- Algorithms/Complexity

Past

- Operating Systems (H)
- Computer Architecture (H)
- Data Structures (H)
- Discrete Mathematics (H)
- Wireless Networks
- Competitive Programming
- Probability
- Linear Algebra
- Multivariable Calculus

Skills

Proficient: Java, C, LaTeX, Unity
Familiar: C++, C#, Rust, Go, Python, x86_64 assembly, SQL, Javascript, HTML, CSS
Tools/Concepts: Git, Docker, Node.js, Express.js, Flask

Extracurricular Activities

- Competitive programming
- Association of Computing Machinery (ACM)
- Electronic Game Developers Society (EGaDS)
- Math and Science Teachers of Tomorrow (MASTT)

Smaller Projects

Treaps

- Implemented a randomized data structure combining features of trees and heaps

Tetris

- Implemented game logic and a simple AI to play the game

Random Writer

- Generates random text from sources using Markov chains

Experience

Software Consultant - ASAA Consulting, Inc. **Sept. 2018 - present**

- Wrote C# functions to verify existence and integrity of data in Amazon S3 buckets for use in a serverless AWS Lambda function
- Verified correctness by mocking dependencies

Research Intern - Parasol Laboratory **Jun. 2016 - Aug. 2016**

- Implemented metrics in C++ using Parasol Motion Planning Library (PMPL) to evaluate ligand binding site candidates on protein surfaces, parsing protein database files and writing metrics to text files
- Proposed future application of metrics as features in a neural network
- Compiled a technical report and presented findings at undergraduate research symposium

Personal Projects

Judge for Programming Contests **Jun. 2018 - present**

- Developing a framework to manage, accept submissions for, and judge programming contests
- Implementing a web portal using Flask backed by a SQL database for tracking submissions and scoreboards

***Pest Control* - Team Lead** **Nov. 2016 - Apr. 2017**

- Developed a video game in a team of four using the Unity engine in which the player takes on the role of an insect and completes various challenges
- Wrote mechanics for players to walk on surfaces and implemented user interface elements
- Facilitated effective communication and organized team meetings

Class Projects

Web Crawler and Search Engine **Nov. 2017 - Dec. 2017**

- Implemented a web crawler and search query engine in Java
- Designed a web index using inverted indexing and a query language with precedence order and logical operations
- Developed a comprehensive testing framework, using graph algorithms to model pages and links and using JUnit to automate testing

Computer Architecture Projects **Jan. 2018 - May 2018**

- Used C (later, Rust) to write an interpreter and compiler for a simple programming language with global variables, arithmetic, and functions
- Wrote a concurrency API in C with context switching and channels for communication between threads
- Designed single-cycle, multi-cycle, and pipelined processors in Verilog

Operating Systems Projects **Sept. 2018 - Dec. 2018**

- Implemented a kernel with a heap, preemptive threading, virtual memory, a file system, and a user mode with system calls
- Wrote hardware interrupt-based PS/2 keyboard and mouse drivers

Honors

Leo and Catherine Schein Memorial Scholarship **Fall 2017, Spring 2018**

- Endowed scholarship through the Department of Computer Science for undergraduate Turing Scholars