Justin T. Hutchins

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Present Address
600 E Madison
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Education

University of Michigan, Ann Arbor, MI
Class of 2022, Honors Program
Intended Major: L.S.A. Computer Science, B.S.
Current G.P.A.: 3.5 / 4.0
Relevant Coursework: Data Structures and Algorithms, Programming and Data Structures, Elementary Programming Concepts, Introduction to Computer Organization, Discrete Mathematics, Introduction to Statistics and Data Analysis, Honors Calculus 1, Honors Calculus 2
Skills: C++, C, Python, R, Git, Linux/Ubuntu, Microsoft Office Products

Projects

Coordinate Path Finder **December 2019**

- Calculated time efficient, near-optimal and optimal solutions to the Traveling salesman problem (visiting given coordinates and returning to the starting point) using algorithms and heuristics such as Arbitrary Insertion, Nearest Neighbor, and Branch and Bound.
- Utilized Prim's and Kruskal's algorithms to produce Minimum Spanning Trees that connected over 10,000 unique coordinates under constraints.

Error Log Interface **November 2019**

- Designed and programmed an interface to manage error log data files with search and retrieve functions and developed an excerpt list for easier organization and efficiency.
- Coded using hash tables and various sorting algorithms such as Merge Sort, Quick Sort, Insertion Sort, and Counting Sort, while analyzing and optimizing time and space complexity.
- Scored 100% on the final project submission, determined by rigorous tests, thorough debugging checks, and strict time and space complexity constraints.
- Wrote 20+ detailed test files that included up to 40,000 error log entries in order to stress test and debug edge cases.

Priority Queue Implementation **October 2019**

- Implemented the priority queue abstract data type structure using a sorted array-based container, a binary heap, and a pairing heap, while comparing time and space complexities.
- Used dynamic memory and object-oriented programming to create node data structures that relied on pointers to simulate heaps.

Extracurricular Activities

Michigan Hackers at the University of Michigan
Core Team Member, January 2019 - Current

- Joined the Security Team, working with 15+ other members to learn and practice security concepts in the Linux environment.
- Worked with the Interviewing Director to gain practical interviewing experience, as well as insight into the application and interviewing processes of large tech companies.
- Demonstrated passion and commitment to become an official Core Team Member for the most influential computer science based student organization on campus.

Video Game Music Club at the University of Michigan
General Member, September 2019 - Current

- Led discussions of important concepts relating to the composition and purpose of video game soundtracks with a group of 20+ student members.