William Dinauer

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Education

Dartmouth College
Sep 2019 - Jun 2023

B.A. Computer Science, Engineering Sciences Minor *GPA: 3.94* Hanover, NH

Relevant Courses: Software Design & Implementation, OOP, Discrete Mathematics, Algorithms, Machine Learning, Artificial Intelligence, AR/VR Development, Computer Architecture, Compilers, Smartphone Programming

Leadership & Experience: Captain (2022 – 2023), Treasurer (2020 – 2021), and Saber Squad Leader (2020 – 2023) of Dartmouth College Fencing Club (DCFC); Vice President and Treasurer (2022 – 2023) of CoderDojo, teaching introductory computer science concepts to underserved high school students

Honors & Awards: Magna Cum Laude, Phi Beta Kappa Inductee, Rufus Choate Scholar (2019 – 2020, 2022 – 2023), Machine Learning Academic Citation, Logic & Language Academic Citation

Technical Skills

Languages: Python, Java, C/C++, C#, JavaScript, HTML, CSS, Bash, MATLAB
Developer Tools: Github, Docker, Visual Studio Code, Jupyter Notebook, IntelliJ IDEA, Makefiles, CMake
Frameworks: React, React Native, Unity, Node.js, Express.js, RESTful APIs
Cloud/Databases: MongoDB, Google Firebase, Render
Soft Skills: Effective communication, critical thinking, adaptable problem-solver, collaborative team player

Relevant Experience

Riverside Research
Lexington, MA

Secure and Resilient Systems Intern Jun 2022 - Aug 2022

- Researched and implemented secure RF communications for software-defined radios (SDRs) in a Linux environment using C++, Python, Docker, and CMake.
- Designed and implemented firmware for a cryptographically secure embedded car and key-fob system using C and Python; tested using TIVA boards with RF modules.

Dartmouth Object-Oriented Programming (CS10)
Hanover, NH

Group Tutor Jan 2022 - Mar 2022

- Led weekly tutor sessions, assisting students' review of course material and comprehension of problem sets.
- Developed and curated instructive questions related to data structures, search algorithms, synchronization, and other course topics to enhance students' understanding and mastery of key concepts.

Dartmouth Software Design & Implementation (CS50)
Hanover, NH

Learning Fellow Jan 2021 - Nov 2021

- Led and organized three teams of four as a Scrum master to successfully implement a Sudoku solver in C.
- Provided daily support to groups of students during in-class activities and labs involving Bash and C.
- Designed and delivered an hour-long lecture on GitHub/Git flow, featuring practical examples and interactive exercises.
- Continuously enhanced the classroom environment by improving the course structure through weekly meetings with the professor and other learning fellows.

Relevant Projects

Cedar
Full-Stack Developer

- Led development of mobile app addressing campus sexual assault using React Native, Expo, Node.js, and MongoDB. Implemented RESTful API with Express.js and web sockets, ensuring real-time communication. Deployed app on Render and TestFlight. Optimized MongoDB database structure for efficient storage.

Part of Speech Recognizer
Software Developer

- Developed a Java program for part-of-speech recognition by building a Hidden Markov Model (HMM) and applying the Viterbi Algorithm. Constructed the HMM using a training set of data to track transitions and observations of tags, enabling accurate tagging of a test set using the Viterbi Algorithm.

Tiny Search Engine
Software Developer

- Developed a fully functional web crawler, indexer, and querier (∼2k+ lines of code) in a Unix environment using C, resulting in a scalable search engine with extensive documentation.

Space Wizards
VR Game Developer

- Developed VR multiplayer spellcasting game using Unity and C#. Implemented game mechanics, including fireball shooting and projectile blocking. Utilized Normcore for multiplayer functionality. Designed a unique control system where players cast and actively control fireballs by performing physical motions in the forward direction, calculated using a dot product threshold.