Liam Willis

Plymouth, MA 02360 | (774) 269-7663 | liamwillis0@gmail.com | linkedin.com/in/liam-willis-b328a4242

Education

- University of Massachusetts Boston | Bachelor of Science in Computer Science | 4.0 GPA | Expected June 2025
- Sturgis Charter Public School | High School Diploma | International Baccalaureate Diploma | 4.18 GPA | Graduated June 2021

Skills

- I am proficient with the following languages and technologies: HTML, CSS, JavaScript, Java, Python, C/C++, Assembly Language, Coq, WebGL/GPU, three.js, Git/GitHub, Excel, and PowerShell.

Relevant Coursework

- Computing in Python
- Intermediate Computing with Data Structures
- Programming in C
- Calculus-Based Probability and Statistics
- Operating Systems
- Computer Graphics
- Ethics in Computing
- Discrete Mathematics
- Linear Algebra
- Advanced Algorithms
- Theory of Computation

Projects

ARDUINO ULTRASONIC MOTION SENSOR

- Created a motion sensor utilizing an Arduino microprocessor, the Arduino IDE, and an ultrasonic sensor.
- Interpreted voltage signals from analog pins and created software to detect the velocity of an object as well as the direction of motion.

KD-TREE IMPLEMENTATION

- Implemented a symbol table API whose keys are two-dimensional points using both a red-black binary search tree and a 2D-tree as underlying data structures.
- Supports search, insert, traversal, nearest-neighbor search, and k-nearest neighbor search operations.

AUTOCOMPLETE ALGORITHM

- Implemented a word auto-complete algorithm using historically determined string query weights.
- Utilizes binary search to find likely queries which match the current user input and displays the likely queries in descending order of probability based on their respective associated weights.

Accolades

- Recipient of the Rensselaer Medal Award for outstanding achievement in Mathematics and Physics.
- Recipient of the 2021 Harbor One Community Scholarship for community service and academic achievement.
- Recipient of the UMass Amherst Cape Cod Alumni Network Scholarship for excellent academic performance.