Valeriy Soltan

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Education

B.S in Computer Science and Statistics *Amherst, MA*

University of Massachusetts Amherst, GPA: 3.95/4.0 *Expected: 2022*

- **Awards:** Member of Commonwealth Honors College, Dean's List.
- **Relevant Coursework:** Algorithms, Data Structures, Physical Computing, Systems Programming.

Experience

OpenThings *Amherst, MA*

Firmware Intern *May 2020 - PRESENT*

- Integrated highly requested features into the OpenSprinkler product firmware, enabling users to pause programs and configure task execution order.
- Migrated notifications framework from HTTP to MQTT, reducing network overhead and providing support for communication between the sprinkler controller and off-the-shelf home automation hubs.
- Implemented front-end user interface for new firmware features using jQuery and CSS.

Undergraduate Course Assistant *Amherst, MA*

COMPSCI 240: Reasoning Under Uncertainty *Spring 2020*

- Assisted course staff by leading small group discussions, grading assignments, and proctoring exams.

Projects

Raytracing Accelerator

Javascript *Spring 2020*

- Used THREE.js to implement a ray tracer capable of rendering complex, super-sampled scenes with realistic lighting effects.
- Integrated a bounding volume hierarchy (BVH) acceleration structure, reducing the number of intersection computations and making render times ~40x faster.

Simple Watch

C, C++, Java *Fall 2019*

- Designed and engineered a smart watch, including the PCB and firmware, that is capable of connecting to mobile devices via Bluetooth and a mobile companion app.
- Created a suite of applications to run on the watch, including a timer, music player, and dynamic weather widget powered by OpenWeatherMap API.
- Implemented operating system elements like application save states, accurate time-keeping, and a scrolling navigation system.

Slide Business Card

Swift, Objective-C *Summer 2019*

- Managed a team of five developers to create an iOS application that encodes digital business cards into a scannable code, simplifying contact creation and sharing.
- Used Firebase to store user profiles and integrated Google and Facebook APIs to offer users multiple sign-in options.
- Refactored the entire code base to follow the model-view-controller (MVC) design pattern.

Awards

Real World Design Challenge

"Most Creative Design" National Merit Award *2018*

- Designed a path-finding algorithm for an unmanned aircraft system to survey and eliminate crop infestation.

MathWorks Math Modeling Challenge

Honorable Mention and $1000 prize *2017*

- Analyzed the risk of natural disasters to model the implications of climate change across the country.

Skills

Languages Java, C, C++, Python, JavaScript, CSS, HTML.

Tools Git, Arduino, ESP 8266, React, Firebase, Xcode, Android Studio.