Will Farhat

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### Education

**University of Southern California – Viterbi School of Engineering Expected Graduation: May 2025**

Bachelors of Science in Computer Science

Honors: Viterbi Research Fellowship

Relevant Courses: Discrete Methods for Computer Science, Calculus II

**Harvard-Westlake High School June 2021**

GPA: 4.43/3.89

Relevant Courses: AP Physics C Mechanics, AP Computer Science A, AP Calculus BC, Design and Data Structures

### Skills

* C++, C#, Java, JavaScript/Typescript/HTML/CSS, Python
* Node.js, React, OpenCV, TensorFlow
* Git, Unity, Unreal Engine, GameMaker Studio 2, Linux, AWS EC2/S3/Elastic Beanstalk, Docker/Kubernetes

### Experience

**Undergrad Research Fellow**   **August 2021-Present**

[USC One World Terrain Project](https://ict.usc.edu/prototypes/one-world-terrain-owt/), Los Angeles, CA

* Working with the Department of Defense to map environments using deep learning and point cloud segmentation
* Researching existing solutions and performing comparison tests between different Deep Learning models using Python
* Building artificial environments with Unreal Engine for additional Python training data
* Writing and presenting research papers on new advancements in photogrammetry and segmentation techniques

**Software Engineering Extern**  **February 2021-May 2021**

[USC QED Research Lab](https://qed.usc.edu/), Los Angeles, CA

* Developed Multi-Modal Visualizer, a Python data visualization tool for medical researchers to analyze time-series data
* Built with Python, React, the TIG Stack (Telegraf, InfluxDB, Grafana), and Kubernetes

**Freelance Full-Stack Game Developer** **July 2020-January 202**1

[Tiny Headed Kingdom](https://tinyheadedkingdom.com/), Studio City, CA

* Developed [Tiny Headed Game](../../../../../C:/Users/willf/AppData/Local/Temp/MicrosoftEdgeDownloads/18d2bb71-a0df-4cbf-98de-2ff3cf6e29cb/thkgame.com), a multiplayer video game for the company’s Holiday 2020 marketing campaign
* Built with Node.js and PHP (backend), GameMaker Studio 2 (frontend), AWS (Hosting), and Firebase (DB)
* Managed server CI/CD during the game’s rollout; final product played by over 800 users

### Involvement

**Avionics Software Developer,** USC Rocket Propulsion Laboratory **August 2021-Present**

* Developing C++ unit testing frameworks for spaceshot vehicle control systems
* Integrating new embedded C++ software into Domepiercer flight vehicle

**Organizer and Instructor,** [HW Inc](https://www.inc.hw.com/)  **November 2018-June 2021**

* Led and organized Harvard-Westlake’s 45-person annual entrepreneurship camp for 3 years
* Taught workshops on competitive landscapes, branding, and MVP development
* During the Covid-19 Pandemic, designed an online multiplayer game and social hub, allowing over 100 participants and alumni to communicate through a digital recreation of the school library
* Presented each year’s progress to audiences of up to 300 people

**Computer Science Mentor,** [Leaders United for Change](https://leadersunitedforchange.org/) **March 2020-June 2021**

* Supervised online Python tutoring sessions through Zoom for over 50 middle school students
* Wrote and taught a 6-week summer program about Python, HTML, and Machine Learning to 60 students

### Projects

* **FreehandVR** – markerless VR hand-tracking prototype using Unity and OpenCV
* **[ReMotion](https://willfarhat.com/" \l "remotion)** – 3D positional tracking software for AR game design using Python and C++
* **[MMOMaker](https://willfarhat.com/" \l "mmomaker)** – open-source MMO framework for GameMaker Studio 2
* **Markov Books** – procedural book extender using a Java implementation of Markov chains
* **Willfarhat.com –** personal full-stack website hosted on Linux and built with React, Javascript/Typescript, and Node.js
* **[Coffeehouse](https://willfarhat.com/" \l "coffeehouse)** – WebRTC and Javascript powered conference calling for music sharing and virtual jam sessions
* **Inc View –** Node.js video calling web app to connect multiple computers into a geographic camera network