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

**Harvard-Westlake High School June 2021**

GPA: 4.43/3.89

### Skills

* Python, JavaScript/TypeScript/HTML/CSS, Java, C#, C++
* Node.js, ReactJS, OpenCV, Express.js, TensorFlow, DevOps
* Git, Linux, Shell, AWS EC2/S3/Elastic Beanstalk, Firebase, Docker/Kubernetes, Unity, Unreal Engine, Microsoft Office

### Experience

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

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

* Currently researching new advancements in photogrammetry and segmentation techniques for large-scale terrain mapping with deep learning In Python; to date, have found and presented 12 different academic publications to the team
* Building synthetic training data in Unreal Engine, with the goal of expanding the pool of training data by 30%

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

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

* Developed Multi-Modal Visualizer, a Python and ReactJS visualization tool for medical time-series data, in 5 weeks
* Interviewed 6 lab researchers and ensured the tool fulfilled their primary needs: handle different types of sensor streams concurrently, automatically parse CSV files, and run on modern and legacy Windows, MacOS, and Linux machines
* Set up automated deployment in Kubernetes to remove the need for pre-installed dependencies and manual configuration

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

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

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

### Involvement

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

* Currently developing C++ unit testing frameworks for spaceshot vehicle control systems, with the goal of increasing test coverage by 70% to include embedded software for data acquisition
* Working with the team to conduct proof testing and software integration on the upcoming Domepiercer rocket hardware

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

* Co-organized and led IT at 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, programmed and deployed an online social hub in 3 weeks on AWS, allowing over 100 participants and alumni to communicate through a multiplayer 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, JavaScript, and Machine Learning to 60 students

### Projects

* **FreehandVR** – marker-less VR hand-tracking prototype using C# and Python
* **[ReMotion](https://willfarhat.com/" \l "remotion)** – 3D positional tracking software for AR game design using Python and C#
* **Markov Books** – procedural book extender using a Java implementation of Markov chains
* **[MMOMaker](https://willfarhat.com/" \l "mmomaker)** – open-source MMO framework for GameMaker Studio 2
* **Willfarhat.com –** personal full-stack website hosted on Linux and built with ReactJS, JavaScript/TypeScript, and Node.js
* **[Coffeehouse](https://willfarhat.com/" \l "coffeehouse)** – WebRTC and ReactJS 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