Sagar Dhunna

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EDUCATION

University of California, Irvine   Irvine, CA
B.S. Computer Science (General Computer Science)   *Sep. 2024 – June 2026*
GPA: 4.0 — President's List, Dean's List

Cypress College   Cypress, CA
Associate's in Science for Transfer   *Aug. 2022 – May 2024*
GPA: 4.0 — President's List, Dean's List

EXPERIENCE

Undergraduate Research Assistant   June 2023 – Aug 2023
California State Polytechnic University, Pomona   *Pomona, CA*
- Led a team of three to generate annotated image data using 3D models for custom object detection training
  * Presented research poster at Cal Poly Pomona's Annual Research Symposium
- Engineered a tailored 3D reconstruction workflow, utilizing a combination of cutting-edge tools in **Reality Capture and Blender**
- Employed a pre-existing Unity pipeline to develop synthetic data in COCO format
- Developed a custom object detector by training a **Machine Learning** model in **Roboflow**
- Achieved promising metrics: **66.1% mAP, 77.7% precision, and 62.0% recall**

Lead Tutor   Feb. 2024 – Oct. 2024
Optimus Learning School   *Brea, CA*
- Developed a customized Math and English curriculum for grades Kinder - 2nd
- Tutored students from kindergarten to 12th grade in various mathematical concepts
- Taught Intro to Programming classes on a weekly basis

PERSONAL PROJECTS

RemindMe | *Swift, UserNotifications, MessageUI, Contacts, CoreData, SendGrid, Twilio*   Aug 2024 – Present
- Built a **SwiftUI**-based frontend for an **iOS** app, enabling users to schedule and **automate** reminders, send emails, and messages, with a seamless user experience throughout the app.
- Implemented **User Authentication**, **Push Notifications**, and **Analytics** in the app using **Firebase SDK**.
- Integrated the **Contacts** framework to automatically retrieve and populate user birthdays from their device, eliminating manual entry.
- Developed scheduled **messaging (Twilio)** and **email (SendGrid)** functionality, allowing users to compose and **automate reminders**, sending emails or texts at specified times with user interaction.

Crumple Trees | *Git, C++*   Oct 2024
- Developed and implemented a Crumple Tree, a self-balancing binary search tree with a balance invariant, optimized for efficient insertion, deletion, and search operations.
- Implemented **dynamic memory** allocation and **memory management techniques** to efficiently handle node creation, deletion, and cleanup, ensuring proper memory deallocation to prevent leaks and optimize performance.
- Employed **Test-Driven Development** (TDD) to ensure functionality, achieving full points for the project with rigorous testing and validation of all required features along with potential edge cases.

Personal Website | *GitHub, React, Express.js, Vite.js, Bootstrap*   Nov 2024 – Present
- Used **GitHub** for version control and collaboration.
- Developed the frontend of the website using **React** and styled it with **Bootstrap**.
- Built the backend with **Express.js** to handle routing and API requests.
- Utilized **Vite.js** for fast development and optimized build processes.

TECHNICAL SKILLS

Languages: Swift, C++, Python, HTML, CSS, JavaScript
Frameworks: React, Express.js, SwiftUI, Firebase SDK, Bootstrap
Developer Tools: Git, GitHub, Xcode, Visual Studio Code, Pycharm
Libraries: SendGrid, Twilio, Firebase, MessageUI, CoreData