Gabriel Gifford

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EDUCATION

University of California Santa Barbara   Santa Barbara, CA
Statistics and Data Science - Undergraduate   *September, 25th, 2025 - present*
- PSTAT 100 (IP), MATH 8 (IP), PSTAT 120B (IP), PSTAT 160A (IP)
- PSTAT 10 (A), PSTAT 8 (A+), PSTAT 120A (A+)
- GPA: 4.0

College of the Canyons   Valencia, CA
AS-T Computer Science   *February 2023 - May 2025*
- Member of MESA, Astronomy and Physics Club Member
- Relevant Coursework: Intro to Algorithms and Java, Data Structures and Program Design, Advanced Data Structures, PHP Programming, Computer Architecture and Assembly Language, C Programming, C++ Programming and OOP, Discrete Structures
- CMPSCI Classes Taken: 111, 111L, 182, 182L, 235, 236, 256, 122, 282, 192

EXPERIENCE

Gifford Hockey Training   August 2024 – Present
Founder and Head Instructor   *Valencia, CA*
- Founded and scale a private hockey training business, managing client acquisition, logistics and training protocol design for athletes
- Engineered a proprietary, Dependency-free JS/CSS scheduling dashboard to visualize instructor availability and manage ice time allocations across multiple venues
- Reduced overhead by developing an automated scheduling workflow and eliminating manual calendar conflicts. This improved the client booking experience and reduced instructor working hours by 10-30 percent each week
- Designed and conducted technical analysis for players utilizing video breakdown and statistical feedback to improve player mechanics and effectiveness

PROJECTS

Interactive Scheduling and Visualization Engine | *JavaScript, JSON, CSS3, DOM*   August 2025 – Present
- Engineered Client-side algorithm to parse, normalize and group temporal JSON datasets into a structured monthly matrix while managing timezone offsets and data persistence
- Developed a dependency-free rendering engine that dynamically generates HTML elements based on data state. Utilizes CSS Grid for a dynamic layout that adapts to both desktop and mobile displays
- Deployed the solution to my hockey business to streamline operation and create an interactive user interface for client accessibility

Python Static Site Generator | *Python, OOP, Recursion, Regex, Git*   August 2025 – September 2025
- Engineered a recursive algorithm to traverse and manipulate a tree of hierarchical nodes and mathematically model the HTML DOM
- Designed and implemented a custom parser using functional programming to tokenize raw markdown text, distinguishing between block-level structures and inline elements
- Implemented a modular Object-Oriented design to separate content logic from presentation. This enabled the automated conversion of unstructured text files into performance-optimized static HTML

Asteroids Game | *Python, Pygame, UV*   August 2025 – October 2025
- Implemented 2-D vector arithmetic to manage object velocity, rotation and Cartesian coordinate positioning within a continuous game loop
- Designed a modular class hierarchy using inheritance to manage distinct game entities and ensure standardized update and draw methods across dynamic objects
- Applied circle-based collision detection logic to calculate interactions between entities and trigger state changes such as game over and asteroid splitting

- Engineered a multi-file application structure using OOP to encapsulate game state, input handling, and rendering logic

Boot.Dev Courses | *Computer Science and Backend Engineering Curriculum*   February 2025 – Present
- Advanced Data Structures and Algorithms, Object-Oriented Programming, Functional Programming, Distributed Systems, Management (SQL/noSQL), Docker, CI/CD
- Completed over 400+ hours of hands-on coursework focusing on backend architecture, memory management and computational complexity
- Completed personal and Guided projects to showcase and implement the techniques and skills learned

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL (Postgres), JavaScript, HTML/CSS, R, Golang, Git, Linux, Markdown, JSON, Bash, LaTeX
Frameworks: React, Node.js, Flask, JUnit, WordPress, Material-UI, FastAPI, Pytest/Unittest, Tidyverse, DOM API
Developer Tools: Git, Docker, Bash, Rstudio, TravisCI, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse, PhpStorm, CLion
Libraries: Pandas, NumPy, Matplotlib, Pytest/Unittest