

# Mathew Kramsch

UCSB COMPUTER SCIENCE STUDENT · FULL-STACK SOFTWARE DEVELOPER

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## Education

### University of California, Santa Barbara

*Expected Graduation: Jun. 2022*

#### BACHELOR OF SCIENCE IN COMPUTER SCIENCE

*Sep. 2017 - Jun. 2022*

- **Relevant Courses:** Data Structures and Algorithms • Object Oriented Design • Computational Science • Computer Architecture • Computer Organization and Logic Design • Database Systems • Computer Communication Networking • Operating Systems • Machine Learning • Programming Languages • UI/UX Design
- **GPA:** 3.54

## Work Experience

### Front-End Web Developer

*Santa Barbara, CA*

#### TUFFHOUSE INC.

*Dec. 2021 - Current*

Worked as sole front-end developer for start-up company based in Santa Barbara to design and implement a scalable online store website.

- Used React, Next.js, and SASS to build a fully mobile-responsive front-end from scratch, including a dynamic online store and blog
- Used Axios API to connect front-end to a Django and Python back-end for storing user cart data, receiving messages, and email harvesting
- Implemented a secure shopping cart and checkout process using session cookie tracking and Stripe API for payment processing
- Employed SEO techniques such as server-side rendering with Next.js, dynamic sitemap generation, Google Analytics, and social metadata
- Integrated with Google Analytics for tracking website performance, and Google Maps API for displaying location
- Used Figma for iterative design of wireframe for site pages. Built a clean and modern user interface for the website

## Projects

### KOS Operating System

*Santa Barbara, CA*

#### UC SANTA BARBARA

*Sep. 2021 - Dec. 2021*

Designed and implemented a functional light-weight operating system kernel for a simulated DEC MIPS R3000 machine from scratch in C.

- Implemented the baseline Linux system call interface necessary to run a fully-capable command line shell and to implement pipes
- Developed simple time-shared multi-programming, task switching, interrupt and exception handling, and time-slicing
- Exercised test-driven development practices, writing tests in C cross-compiled for the MIPS R3000 to extensively test the OS against Linux
- Demonstrated advanced knowledge of memory management, asynchronous systems development, multi-threading, and kernel programming
- Programmed completely in C using a non-preemptive threads library, semaphores, and GDB for debugging

### Isla Vista Housing Search

*Isla Vista, CA*

#### UC SANTA BARBARA

*Mar. 2020 - Jun. 2020*

Created production-ready web application to facilitate the housing search process, allowing users to post and browse housing listings.

- Wrote organized, thoroughly documented, and scalable code using React, Next.js, JavaScript, HTML/CSS, and Node.js
- Deployed production and quality assurance deployments on Heroku, employing continuous integration practices
- Maintained a MongoDB database to manage and dynamically store housing and user data
- Integrated with Mapbox API for visually comparing housing listings on a map of Isla Vista
- Created a robust and secure login system to allow users to post, edit, and delete housing listings
- Used Auth0 API with Google Sign-In for secure and hassle-free user authentication
- Developed in a team of five, utilizing Git and GitHub for collaborative programming and version control branching

### Front-End Web Development Online Courses

*Santa Barbara, CA*

#### THE ODIN PROJECT, FREECODECAMP

*Aug. 2020 - Sep. 2020*

Completed two intensive project-focused extracurricular online courses in front-end web development, JavaScript, HTML, and CSS.

- Attained proficiency in front-end web development including JavaScript, HTML, advanced CSS, UI design, SEO, accessibility practices
- Created complex web-pages with an emphasis on mobile-responsiveness, cross-browser compatibility, accessibility, and SEO
- Built multiple mock landing pages, browser-based games, and various in-browser JavaScript utility applications

## Skills

**Programming Languages, etc:** C • C++ • Java • Python • JavaScript • OCaml •  $\lambda^+$  • HTML/CSS • LaTeX • SQLite • Datalog

**Tools & Technologies:** React • Next.js • SASS • Node.js • MongoDB • Figma • Git • Heroku • Vercel • Eigen3 • OpenCV  
Jupyter Notebook • numpy • pytorch • GDB • valgrind • Bash

**Industry Skills:** Object-Oriented Programming • Version Control Branching • Continuous Integration • Database Management  
Scientific Computation • Search Engine Optimization • Socket Programming • Kernel Programming • UI/UX Design