

# Mark Carson

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<http://markcarson.dev>



An experienced and thoroughly educated developer with over 7 years of passionate self-driven programming experience looking to use machine learning and new technology to help environmental causes.

## EDUCATION

### **Bachelor of Science in Computer Science**

August 2020 - Present (Planned completion in December 2024)  
California State University, Long Beach · Long Beach, CA · 3.41 GPA

### **Study Abroad in Hamburg**

March 2023 - August 2023

Hamburg University of Applied Sciences · Hamburg, DE

\*Studies centered around elective research in machine learning, data science, and smart sensing robotics.

## SKILL STACK

**Statistical Computing:** Python with Jupyter, SciKitLearn, Tensorflow

**Data Manipulation and Visualization:** Pandas, Matplotlib, Seaborn

**General-Purpose Programming:** Python, Java, C++, Rust, C#

**Web Backend:** Python (Flask), NodeJS, PHP

**Web Frontend:** HTML5, CSS, JavaScript, JQuery

**Miscellaneous:** Docker, Prompt Engineering

**Communication**

**Teamwork**

**Problem Solving**

## PROJECTS

### **Queen Bee Detection App by Audio ML**

April 2023 - August 2023

- Designed a mobile web application 'QueenRite' to accompany this classification model for use in non-invasive apiaries and bee conservation efforts.
- Performed advanced data analysis and cleaning on a dataset of over 7000 audio recordings from California beehives.
- Designed a compact and efficient RNN-LSTM model architecture to classify the presence and acceptance of a queen in beehives, achieving 85% accuracy when deployed on a mobile device as an embedded system.

### **AI Moderated Web Forum**

March 2023 - July 2023

- Lead a team of 4 on the development of 'ForumIpsum', an AI moderated forum web application with complete user authentication integration.
- Designed and implemented forum frontend, backend application, and database using HTML5 and JS, Flask, and MongoDB, all virtualized using Docker.
- Collaborated with teammates to train an CNN-LSTM model for sentiment analysis and a Large Language model (LLM) for hate speech detection, misinformation classification, and rephrasing suggestions.

### **Esport Tournament Discord Bot and Auxiliary Website**

November 2017 - May 2019

- Developed a tournament assistant bot for my organization 'Frag Academy' using the DiscordJS module for NodeJS.
- Parsed API data from 6+ sources and used data science methods to create an Elo system for players based on their competitive match history.
- Integrated user experience with the auxiliary website for supplemental materials to help players learn fundamental skills.
- Designed and developed a website to provide supplemental information to prospective competitive Esport players using HTML5 and JQuery.

## WORK EXPERIENCE

### **Systems Integration Programmer Student Assistant**

CSULB Enrollment Services · September 2022 - February 2023 · Long Beach, CA

- Implemented application enhancements to the process management system to ease various cross-department business procedures.
- Managed documentation through a large inter-department CMS/PMS upgrade process.
- Debugged and developed improvements to backend CMS Java applications.
- Designed numerous test cases for various backend Java and Javascript applications.

### **Desktop Support Student Assistant**

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- Utilized communication and interpersonal skills in a large and fast paced professional environment by assisting with technical issues on more than 300 devices including desktop and laptop computers with very little to no supervision.
- Collaborated with a small team to prepare system images and deploy them over 150 systems to staff members.
- Created powershell and batch scripts to improve software deployment efficiency.
- Employed strong critical thinking and troubleshooting skills to solve diverse software and hardware problems.