

# Enrique Aranda Jr.

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## Computer Science Undergraduate

I am passionate about developing projects that positively impact my peers and collaborating with others to enhance the college experience for students.

## Contact

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## Education

### UNIVERSITY OF CALIFORNIA, SAN DIEGO

BS, Computer Science  
Minor, General Biology  
PRESENT-2026

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## Technical Skills

### Languages:

Java, C/C++, C#,  
Python, SQL,  
HTML/CSS

### Framework:

JUnit, React, Node.js

### Developer Tools:

VSCode, Git

### Architecture:

ARM, SystemVerilog

### Libraries:

NumPy, pandas,  
Spotify API,  
Scikit-Learn,  
Matplotlib,

## Projects

### CUSTOM RISC PROCESSOR

Python, ARM, Assembly, SystemVerilog, C  
July 2025 – August 2025

Collaborated with a teammate to develop a Reduced Instruction Set Computer (RISC) processor under specific constraints such as fixed 9-bit instructions and 8 general purpose registers storing only 8 bits of data. In one month, we assembled components in SystemVerilog for the processor and created an assembler that would convert our ARM functions into machine code that our processor would then use to provide output.

### MUSIC GENERATION WITH RNNs

Python, PyTorch, miditoolkit, FluidSynth  
May 2025 – June 2025

Worked in a team of 4 to design and implement a symbolic music generation model using Recurrent Neural Networks (RNNs) trained on MIDI datasets. We extracted features such as pitch, duration, and note sequences using miditoolkit, and trained the model to predict tokenized note sequences with a language modeling objective. Used libraries at our disposal such as PyTorch to refine our model and generate MIDI files that we then converted to .wav files using FluidSynth.

### MOODY MELODIES

HTML, CSS, React, MongoDB, Spotify API  
Sept 2024 – December 2024

Worked in a team of 7 using software development tools we learned in class to create our React web app, Moody Melodies. Students can create an account and fill out a survey to receive a playlist based on their current mood. We achieved this using the

miditoolkit, PyTorch,  
FluidSynth

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## **Clubs**

*Big Back Club* – Co-  
President

*Triton NeuroTech* –  
Member

*Society of Hispanic  
Professional  
Engineers* - Member

Spotify API to implement a recommendation system where a certain emotion is linked to certain parameters that would return an appropriate list of songs.

## **UCSD CAPES MACHINE LEARNING EXPLORATION**

Python, pandas  
Jan 2024 - Mar 2024

Worked in a team of 10 using the machine learning methods we learned in class to investigate the relationship between several classroom metrics and their effects on student success. We used deep neural networks to derive data from UCSD's Course and Professor Evaluations database and display a predictive model that would highlight certain patterns that would not normally be found.