

# Duane Gennaro

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## EDUCATION

**San Diego State University (SDSU)-** San Diego, CA,

August 2023 – May 2027

**Bachelor of Science, Computer Science**

GPA: 3.6/4.0

- Dean's list: Spring 2024

**Relevant Courses:** Data Structures (CS 210), Algorithms (CS 460), Computer Architecture (CS 370), Discrete Math (Math 245)

## TECHNICAL SKILLS

**Programming Languages:** Java, C++, Python, JavaScript, C, Assembly, HTML, CSS

**Frameworks:** Node.js, Express.js, React.js

## PROJECTS

**Office Hours - Python, HTML, NODE.JS, REACT.js, CSS**

Summer 2025

- Created a Canvas-LMS plug-in to use an LLM(Google Genai) to tutor students in their respective courses.
- Automated data extraction, preprocessing, and embedding of course materials, with the purpose of storing it in a vector database.
- Designed an interactive front-end that takes in prompts and displays LLM responses.
- Implemented Retrieval-Augmented Generation (RAG) to pull relevant data based on the prompt and feed that data to the LLM. Creating responses that are as course and material accurate as possible.

**Quiz Application - Java**

Summer 2024

- Engineered a Graphical User Interface (GUI) to make the program more organic and fun as a study tool.
- Produced an algorithm that calculates the score after each quiz, and provides users with the option to review all incorrect answers, displaying both their selected answer and the correct one.
- Created to help students study while increasing their understanding of how everyday problems could be solved using computers, research, and imagination.
- While taking four summer classes and working 40 hours a week, this application helped me earn an average grade percentage of 95.4%.

## WORK/ LAB EXPERIENCE

**Researcher & Developer**

*Code Research Lab / San Diego, CA*

June 2025 – Present

- Investigated a cutting-edge AI method known as RAG, analyzing architectures and evaluating their effectiveness for file retrieval and response generation.
- Testing different implementations of different vector databases, embeddings, and file management systems, to make storage, retrieval, and processing files as efficient and reliable as possible.
- Researched Learning Tool Integrations (LTIs), assessing integration methods with Learning Management Systems (LMS).
- Explored modern and old web development frameworks, tools, and libraries, in the process of prototyping interfaces to support research projects.
- Pulling all the research together to create an LTI known as Office Hours.

**Calculus 1, Calculus 2, Business Calculus Supplemental Instruction (SI) Leader**

*SDSU / San Diego, CA*

February 2024 – Present

- Collaborating with colleagues to improve group learning and studying, also providing attendees with a 50% better chance of passing the class and an average of 10% higher overall grade.
- Guiding students through activities designed to help them fully understand the most challenging concepts in calculus.
- Attending lectures to refine my understanding of the material.

**Software Engineering Externship**

*JPMorgan Chase & Co. / Remote*

September 2024 – Oct 2024

- Designed and optimized stock price data pipelines, enhancing data processing speed by 25%.
- Developed a responsive web app with React and TypeScript, enhancing UI performance by 30%.
- Integrated a rest API into our program to experiment with the effects of inflation on prices and purchasing decisions within a community.