

Ryan Tan

510-513-2250 | ryntn@berkeley.edu | [linkedin.com/in/ryntn](https://www.linkedin.com/in/ryntn) | github.com/ryantanliner

EDUCATION

University of California, Berkeley

Expected May 2026

B.S. Electrical Engineering and Computer Science - GPA: 3.57/4.0

Berkeley, CA

Relevant Coursework: Structure of Computer Programs, Discrete Mathematics, Probability Theory, Data Structures and Algorithms, Object Oriented Programming, Linear Algebra, Computer Security*, Internet Architecture*

EXPERIENCE

Coding Instructor

Sep. 2023 – May 2024

Code Ninjas

Fremont, CA

- Taught programming concepts in Python, JavaScript, and Unity to 30+ students aged 5–14, boosting coding proficiency and project completion through hands-on activities tailored to individual learning styles.
- Provided one-on-one and group instruction tailored to individual learning needs, boosting student engagement and retention through personalized teaching methods.

PROJECTS

K-Popify | *React, TypeScript, Flask, Python, Pandas, NumPy, Spotify Web API* | [GitHub Link](#)

Dec. 2024 – Jan. 2025

- Built a web application to recommend K-Pop songs based on user-inputted tracks, integrating the Spotify Web API to fetch track features and utilizing Flask for a RESTful backend to deliver personalized song suggestions dynamically.
- Utilized content-based filtering to address the cold start problem, achieving accuracy in matching user preferences to song characteristics without requiring data from users.
- Implemented an algorithm that efficiently analyzes 275 K-Pop songs represented as feature vectors by utilizing Euclidian distance to measure similarity across up to nine distinct audio characteristics.

Binder | *React, TypeScript, Convex, Clerk, Python, Flask, OpenAI API* | [GitHub Link](#)

Oct. 2024 – Oct. 2024

- Led the full-stack development of a collaborative studying platform for custom quizzes and study group matching, leveraging GPT-4 and Flask to generate personalized learning content based on group goals.
- Designed and deployed a Bayesian Knowledge Tracing algorithm to optimize group formation based on users' knowledge levels, enhancing study session outcomes.
- Engineered a secure backend using Convex and Clerk, enhancing authentication accuracy and user data management.

Skincare Tracker | *React, Node.js, Express.js, Tailwind, MongoDB* | [GitHub Link](#)

June 2024 – Sep. 2024

- Built a responsive web app for managing skincare routines using React.js and Tailwind, enabling users to track progress and develop consistency.
- Developed RESTful APIs with Express.js and MongoDB to handle data efficiently, ensuring a seamless user experience.
- Implemented user authentication and administration using JSON Web Tokens (JWT) for secure session management.
- Integrated API tests with Supertest to ensure reliable and accurate endpoints, maintaining the integrity of user data and application functionality.

LEADERSHIP/EXTRACURRICULAR ACTIVITIES

Software Developer

Sep. 2024 – Dec. 2024

Open Project Berkeley

Berkeley, CA

- Engineered an LLM-based movie recommendation system with a team of 7 using Python, PyTorch, and OpenAI API with a two-stage RAG (Retrieval-Augmented Generation) approach, achieving an 82% improvement in predictive accuracy by aligning responses with user feedback.
- Streamlined data workflows with Pandas and NumPy, reducing computation time by 74% and improving response efficiency for large-scale data processing.

Machine Learning Researcher

Sep. 2023 – Dec. 2023

AlgoVerse

Remote

- Collaborated with a group of 4 students to explore the effects of implementing emotional cues when interacting with LLMs.
- Developed a custom language model by integrating emotional stimuli into prompts to enhance user interactions, fine-tuning the model using a combination of transfer learning and hyperparameter optimization techniques.
- Evaluated the impact of emotional cues on NLP tasks, including sentiment analysis, measuring a 52% improvement in user-friendliness.

TECHNICAL SKILLS

Languages: Python, TypeScript, C++, Java, JavaScript, HTML, CSS, SQL

Frameworks: React, Node.js, Express.js, Tailwind, Flask

Tools: AWS, Docker, MongoDB, VS Code, PyCharm, Eclipse, Jupyter Notebook, Google Colab

Libraries: PyTorch, Scikit-learn, NumPy, Pandas, Matplotlib