Senior Capstone Project

My capstone was a group software project for CS132. We designed and implemented a website for watching personalized streams of YouTube videos. Essentially, the user provides a query (e.g. “funny cat videos”) and the website plays a never-ending stream of videos that correspond to the query. In addition, the user has the ability to like or dislike videos, and the server uses this feedback to tailor the next videos in the stream to the user’s preferences. Unofficially, we called it “the Pandora of YouTube”.

My role in the project was primarily working on the backend server. I implemented the basic server infrastructure (API calls, etc.), and I also implemented the personalization aspect of the website using machine learning. I treated the rated songs as the training set, and the unrated songs as the testing data. I trained a support vector machine classifier on the data, and then found the songs in the test set with the highest probability of being liked. These were then returned to the client JavaScript application. Doing this for every video would create strain on the server, so instead new videos were fetched in small batches.

A screenshot of the final product is shown below.