# Shizuka Takao

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## EDUCATION

**University of California, Irvine**                                                Irvine, CA
*Bachelor of Science in Computer Science*                        *September 2024 – June 2026*

**Diablo Valley College**                                                   Pleasant Hill, CA
*Associate's in Computer Science*                                   *January 2022 – May 2024*

## EXPERIENCE

**Software Engineer Fellow**                                            July 2024 – Present
*Headstarter*                                                              *Pleasant Hill, CA*
- Engaged in weekly projects to learn various frameworks and tools, including AWS, Firebase, and Next.js
- Participated in weekly coding interview sessions, achieving a highest score of 80%
- Notable projects include conducting sentiment analysis on "Rate My Professor" to evaluate student feedback
- Explored various classification algorithms to improve model performance for sentiment classification

**Software Engineer Intern**                                        August 2023 – October 2023
*Kasanare Corporation*                                                       *Remote, Japan*
- Enhanced query inputted by the user to improve chatbot's accuracy
- Incorporated prompt engineering methods such as Zero-Shot prompting and Chain-Of-Thought prompting
- Conducted repeated vector search of dataset stored using Pinecone and Langchain's agents and custom tools
- Implemented chatbot memory and improved customer experience through sentiment analysis

## PROJECTS

**Music Recommendation System** | *Tensorflow, Flask, Next.js, Firebase, Docker*          August 2024 – Present
- Preprocessed the Spotify dataset from Kaggle, handling duplicates and imputing missing values
- Applied TF-IDF for text feature extraction to analyze user preferences and improve recommendations
- Developed a hybrid LSTM-CNN model to recommend music tracks by utilizing LSTM for capturing temporal patterns in user interactions and CNN for extracting features from audio spectrograms

**Clothing Recommendation** | *ResNet, Flask, React, MySQL, Google Cloud* | GitHub | Demo          August 2024 – Present
- Processed clothing images through ResNet50 on over 10,000 clothing items for feature extraction
- Implemented vector embedding and querying to display the top 10 clothing items with the highest similarity scores
- Implemented a cloud-based storage solution using Google Cloud and accomplished reliable image retrieval and display by storing and managing over 10,000 image URLs in a distributed manner.

**Diabetes Classification** | *Tensorflow, Keras, Pandas, NumPy, Matplotlib, Seaborn* | Colab          July 2024
- Performed analysis and comparison of classification algorithms, including Random Forest and Gradient Boosted Trees
- Addressed class imbalance using Synthetic Minority Over-sampling Technique (SMOTE) to improve model performance
- Optimized model performance using confusion matrix, precision, recall, and F1-score metrics
- Achieved 91.7% accuracy in predicting diabetes risk with Gradient Boosted Trees

**RecipeMakerAI** | *React, Flask, MySQL, OpenCV, TensorFlow, Keras* | Website | GitHub | Demo          June 2024 – Present
- Fine-tuned and trained a VGG-16 model, achieving 95.3% accuracy in detecting ingredients
- Utilized OpenCV to capture ingredient images for processing by the trained model
- Integrated with Edamam API to fetch over 50,000 unique recipes, tailored to user inputs
- Implemented a chatbot assistant using the OpenAI API to handle user inquiries

**NewsWeb** | *HTML/CSS, JavaScript, Web-pack, NewsAPI, Git* | Github          June 2024
- Implemented category selection, responsive design, and dynamic content fetching using NewsAPI
- Optimized and bundled assets with Webpack, improving load times and performance across devices
- Developed a duplicate filtering system to ensure unique news content
- Co-managed project development and codebase with Git, ensuring smooth collaboration and version control

## TECHNICAL SKILLS

**Languages**: Python, SQL, JavaScript, C/C++, MATLAB, HTML/CSS
**Frameworks**: React, Next.js, Flask, Langchain, Pinecone
**Libraries**: TensorFlow, Keras, scikit-learn, pandas, NumPy, Matplotlib, seaborn, OpenCV, Pillow, Beautiful Soup
**Cloud Platforms**: AWS, Firebase
**Databases**: MySQL, PostgreSQL
**Developer Tools**: Git, VS Code, Google Colab, Jupyter, Docker