Raj Pulapakura
raj-pulapakura
Portfolio

Raj Pulapakura

Full Stack Engineer
raj.pulapakura@gmail.com

Melbourne, Australia
3 Bellbrae Crescent, 3977
Mobile: +61 0469 766 823

TECHNOLOGIES AND LANGUAGES

- **Languages**: Python, SQL, JavaScript, TypeScript, HTML, CSS, Dart, Kotlin
- **Technologies**: React.js, Next.js, Node.js, Express.js, REST APIs, GraphQL, FastAPI, AWS, GCP, Tailwind CSS, Material UI, Flutter, Firebase, TensorFlow, PyTorch, Scikit-learn, NumPy, Pandas, OpenCV, MySQL, PostgreSQL, MongoDB
- **Other**: Git, GitHub, Docker, Kubernetes, JSON, Figma

PROJECTS

Shoe Ecommerce Website

- Developed a full-stack shoe ecommerce website with **React.js/Typescript** and **Material UI**, with **payments integration with Stripe**, full-text product search and filtering, and a shopping cart.
- Employed Docker for containerization and temporarily deployed website to **AWS ECR**, hosted with **Vercel**.
- Built backend infrastructure using **GraphQL** and **Express.js**, **Redis** for caching authentication details, and **MySQL** and **TypeORM** for database implementation.

Image Search Engine

- Developed a full-stack website with **Next.js/TypeScript** enabling users to drag and drop, and find, similar images.
- Trained and developed a computer vision model with **PyTorch** to compute similarity scores between images.
- Drove latency down by **50%** through MobileNet architecture and optimization of backend infrastructure.
- Connected model and frontend through **REST API** backend built with **BentoML** and hosted using automated **Terraform** infrastructure for **AWS API Gateway** and **AWS Lambda**.

Comment Toxicity Checker

- Developed a full-stack application using **Next.js/TypeScript** and **TailwindCSS** that allows users to get a toxicity rating on their text, deployed with **Vercel**.
- Used **TensorFlow** to train a Natural Language Processing model, **TensorFlow Lite** to efficiently store model shards in repo, and **TensorFlow JS** to dynamically serve model on frontend.

Real-Time Gesture Detection Dino Game

- Developed a replica of the chrome dinosaur game with **Python** and **PyGame**, where the jump action is controlled through hand gestures captured through the webcam in real-time.
- Employed **OpenCV** and **NumPy** for real-time image processing and **TensorFlow** to develop a real-time object detection model reaching precision of up to **97%**.
- Optimized model performance rigorously to ensure performant detection accuracy and pleasing game frame rate.

CERTIFICATIONS

- **Database and SQL for Data Science with Python**, IBM. — Dec 2023
- **Deep Learning Specialization**, DeepLearning.AI — Dec 2023
- **Advanced Machine Learning on Google Cloud**, Google Cloud. — Nov 2023
- **IBM Professional Machine Learning Certificate**, IBM — Sep 2023
- **TensorFlow Developer Certificate**, TensorFlow — Aug 2023

OTHER

- I actively contribute to open-source packages: **TensorFlow** and **Scikit-learn**.
- I write a technical blog on **Medium** and post videos on **YouTube**, sharing my passion for software development, AI, and machine learning.
- **Excellent communication skills**, 5 years consecutive public speaking champion, won Victorian Debating Competition