

TECHNICAL SKILLS

Languages	Python, Bash, JavaScript, TypeScript, HTML/CSS/SAAS, Dart, C++
Frontend and Backend	React.js, Next.js, Vercel, HTML, CSS, SaaS Tailwind, Material UI, Redux, Zustand, Node.js, FastAPI, Flask, Express.js, GraphQL
AI (ML + Generative AI + Data Science)	OpenAI, Gemini, Claude, Unstructured.io, TensorFlow, Keras, PyTorch, Scikit-learn, OpenCV, Hugging Face, NumPy, Pandas, Matplotlib
Database	MongoDB, SQL, MySQL, PostgreSQL, Redis, Firebase, ChromaDB
Cloud, CI/CD	AWS <i>certified</i> (ECR, EKS, EC2, S3, IAM, DynamoDB, Lambda, Athena, Glue) Azure <i>certified</i> (Storage, AI Services, Function App, Cosmos DB, Entra ID) BentoML, Terraform, Firebase, Git, GitHub, Docker, Kubernetes, Modal

PROFESSIONAL EXPERIENCE

AI Engineer	Time Under Tension	April 2024-Present
<ul style="list-style-type: none">- Spearheaded development of several enterprise-scale full-stack Generative AI applications.- Delivered projects for a diverse range of companies from retail, finance and government industries.- Implemented features across the frontend, backend and cloud stack.- Improved performance of a backend function by 80% by optimizing the chat processing workflow.- Liaised with stakeholders and clients to discuss project requirements and do live product demonstrations.- Leveraged knowledge in Git, React.js, Nest.js, TypeScript, Python, Azure’s suite of AI and Compute services and GenAI APIs (OpenAI, Gemini, Claude).		
Software Engineer, Intern	A.I.GORITHM	Jan-Feb 2024
<ul style="list-style-type: none">- Designed and implemented an end-to-end, full-stack Property Report Generation Tool that enables farmers to get detailed agricultural reports on their geographical AOI (area of interest).- Developed a containerized backend using a microservices architecture with Docker and Docker Compose, orchestrating 6 geospatial third-party APIs.- Implemented a frontend application using Next.js, TypeScript and Docker.- Managed deployment to AWS, utilizing ECS, ECR and LB & S3, Athena and Glue to store several agricultural datasets (>1TB) in Apache Parquet and CSV.- Conducted DevOps using Terraform and GitHub Actions.		

CERTIFICATIONS

- Microsoft Certified: Azure AI Fundamentals	Aug 2024
- Microsoft Certified: Azure Fundamentals	Jul 2024
- AWS Certified Machine Learning - Specialty	Jun 2024
- IBM Professional Machine Learning Certificate, IBM	Sep 2023
- TensorFlow Developer Certificate, TensorFlow	Aug 2023

PROJECT WORK

Personal Website: www.rajpulapakura.com (for additional information and projects)

ClarityScan: Deep Learning for Tumour Diagnosis (code , video)	Feb-March 2024
A medical analysis tool that enhances brain MRI scans and automatically identifies glioma tumours in the scans.	
<ul style="list-style-type: none">- Developed a web application so that radiologists can upload their MRI scans, denoise them, and automatically identify glioma tumors.	

- Implemented 2 AI models using TensorFlow for Noise Removal and Tumor segmentation, reaching a Dice Coefficient of up to 91%.
- Deployed models to APIs with GPUs using FastAPI and Modal serverless functions, ensuring inference time during production was ~5 seconds.
- Utilized: Next.JS, TypeScript, Tailwind CSS Python, TensorFlow, NumPy, FastAPI, Modal, AWS ECS & LB, Git, GitHub, AWS ECS, AWS ECR, AWS EC2

Computer Vision Search Engine ([code](#), [web](#), [video](#))

Jun 2023

An app for finding similar images based on images you already own.

- Employed a pre-trained MobileNetV3 neural network in PyTorch to compute image embeddings.
- Deployed the model through to a BentoML backend, hosted using AWS API Gateway and AWS Lambda.
- Developed a web interface with drag-and-drop functionality enabling users to find similar images.
- Utilized: Python, PyTorch, REST API, BentoML, TerraForm, AWS API Gateway, AWS Lambda, Next.JS, TypeScript, Vercel, Tailwind CSS, Git, GitHub

OTHER

- Contributed to multiple open-source packages including TensorFlow and Scikit-learn, mostly documentation-related.
- Collaborated on open-source GitHub issues with fellow developers.
- Write a technical blog on [Medium](#), sharing content on machine learning, deep learning, computer vision, full-stack development, and software development.
- Post videos on my [YouTube](#) channel, demonstrating my projects and sharing knowledge on machine learning and data science, web/mobile development, and software engineering.