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Deekshith Dade

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SUMMARY

Over 3 years of experience in software development and research with proficiency in Deep Learning and Web Dev. Ability to collaborate with talented teams and contribute to cutting-edge projects, leveraging technical expertise and research acumen to deliver impactful solutions with the ability to master new technologies and adapt to evolving tech stacks quickly.

WORK EXPERIENCE

Scientific Computing and Imaging Institute @ University of Utah

Graduate Research Assistant

Jan 2024 - Current

Salt Lake City, United States

- Pretrained a MoCo-style contrastive learning model on 1M+ ECGs, achieving state-of-the-art AUC using just 10% labeled data—matching fully supervised performance.
- Built an end-to-end distributed training pipeline using **PyTorch DDP**, **SLURM**, and **Weights & Biases** for scalable experimentation, tracking, and evaluation.
- Developed from scratch:
 - **VQ-VAE encoder-decoder** and **Latent Diffusion model** for generative modeling of ECG signals.
 - **U-Net-based GAN architecture** for generating signal-level counterfactual explanations in ECG classification.
- Led the design and optimization of **Diffusion U-Net architectures**, enabling structured, interpretable ECG synthesis.
- Collaborated with cross-functional teams from multiple research labs at the to align model outputs with clinical needs.

ZS Associates

Software Developer Associate

Jan 2022 – July 2023

Bangalore, India

- Designed and implemented end-to-end Java-based data pipelines (**Spring Batch + Apache Kafka**) that ingested multi-vendor pharmaceutical datasets, transforming them into near-real-time, customer-centric field-suggestion feeds for several top-10 pharma clients.
- Refactored a legacy Python workflow into a **Spring Boot microservice** backed by **PostgreSQL + Hibernate**; incorporated rep actions/feedback through RESTful endpoints and **Kafka** streams, cutting deployment latency by 25% for 500 sales representatives.
- Led a green-field marketing campaign service: built predictive models in Java (**XGBoost through JVM bindings**) and exposed them through a **REST API**; orchestrated omnichannel campaign logic with **Spring Cloud and Redis**, increasing product revenue for the first month by 20% above the forecast.

EDUCATION

University of Utah

Masters in Computer Science GPA: 3.89

August 2023 - Present

Utah, United States

PROJECTS

AI-Powered EPUB Reader Platform — React, FastAPI, Postgres, Agentic

Website

- Designed a full-stack EPUB reader platform integrating **Next.js**, **FastAPI**, and **PostgreSQL (Supabase)** to deliver intelligent reading experiences via AI-powered chat, summarization, and annotation.
- Developed a custom multi-tool AI agent using **OpenAI** and **Anthropic APIs** with tool access for **web search**, **YouTube search**, and **RAG over Pinecone**; responses streamed live to frontend via FastAPI for minimal latency.
- Built secure media access workflows with **AWS S3 pre-signed URLs** for ebooks, audio tracks, and assets; integrated user-aware content access via webhook-based authentication.
- Deployed backend using **Docker Compose** on **AWS EC2**, with **Nginx** reverse proxy, **HTTPS (SSL)** setup, load balancing, and automated CI/CD using **GitHub Actions**.
- Delivered an interactive, real-time reading UI with chapter navigation, text selection tools, inline comments, and personalized AI chat experiences.
- Registered custom domain via **Namecheap**, configured DNS for production deployment, and linked it to EC2-hosted infrastructure for a branded web experience.

Synthetic Data Generation for Robust Road Sign Detection — DETR, YOLO, Blender, Pytorch

Github

- Developed a Python-based Blender API to procedurally generate diverse, realistic outdoor scenes (roads, terrain, vehicles, traffic signs, etc.), creating a large-scale synthetic dataset for road sign detection.
- Fine-tuned **DETR** and **YOLO object detection models** using both real-world and synthetic data, achieving a 3% improvement in Intersection over Union (IoU) score on a real-world validation set with the synthetic dataset

Assess Transformers' ability to classify long documents — Pytorch, DDP, HuggingFace, NLP	Github
Interactive Multi-Agent Story Generator — LangGraph	Github
Mars Image Captioning and Retrieval Web Application — CLIP, Docker, Semantic Search	Github

SKILLS

- Programming Languages: Python, C++, Java, JavaScript, TypeScript, Go, Node.js
- Core CS: Data Structures and Algorithms, Distributed Systems, Database Systems, Operating Systems, Object Oriented
- Frontend: HTML5, CSS3, React, Next.js, Redux, Tailwind, Bootstrap, shadcn, Webpack, Babel, Web Accessibility, Jest
- Backend: Node.js, Express, Nest.js, Flask, FastAPI, GraphQL, Authentication (OAuth, JWT), WebSockets/WebRTC
- Database: PostgreSQL, MySQL, SQLite, NoSQL (MongoDB, DynamoDB, Firebase), ORM(Prisma, SQLAlchemy), Redis
- DevOps: Git, GitLab, Docker, Kubernetes, Microservices, Nginx/Apache, CI/CD, AWS/Azure/GCP cloud services
- Agentic AI: langchain, langgraph, CrewAI, n8n, autogen, Graph RAG, neo4j, smolagents
- Other: API integration, Payment gateways, security best practices (OWASP), Performance testing, PWAs