Mohammad Ausaf

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EDUCATION

- **KIET Group of Institution** — Ghaziabad, India
  Bachelor of Technology - Computer Science — 2024
  Courses: *Probability and Statistics, Calculus, Operating Systems, Data Structures and Algorithms, Machine Learning, Databases*

SKILLS SUMMARY

- **Languages**:   Python, C++, HTML, SQL, Swift(Hobby)
- **Frameworks**:   FastAPI, Flask, PyTorch, TensorFlow, OpenCV, Gradio, Docker
- **Cloud & APIs**:   AWS, GCP, Git (GitHub-Actions), CI/CD, Firebase, RunPod, Replicate, OpenAI, HuggingFace
- **Databases**:   MongoDB, Pinecone, Weaviate, Vertex AI Vector Search
- **Architecture**:   Microservices, Asyncronous Processing, Webhook Systems, RESTful APIs
- **Specializations**:   Image & Video Generation (LoRA, Flux, SDXL, ComfyUI), NLP, Data Ingestion & Semantic Search
- **Soft Skills**:   Team Managment, Product Strategy, Academic & Research Writing

EXPERIENCE

Galleri5 - Software Engineer (AI) - Link — Bengaluru
(Full-time) — *Dec 2023 - Present*

- **Research & Development**: Led R&D initiatives integrating SOTA ML/AI techniques for image and video generation pipelines serving major e-commerce clients. Researched, prototyped, and optimized custom image generation workflows in ComfyUI.

- **Backend Development**: Architected scalable microservices for Trends platform and Curations platform serving major e-commerce clients (Myntra, Ajio, Flipkart, H&M, Amazon) . Built asynchronous backend systems handling long-running ML jobs with webhook integration, cross-database operations, and real-time status tracking using FastAPI and Google Cloud (including gcp Cloud Tasks and Queues). Developed internal tools repository and end-to-end generation platform managing Business-as-Usual team workflows.

- **System Design**: Developed the entire Backend stack for AI SAAS platform. Designed authentication systems, long running model training workloads, and asset management with lifecycle tracking, and file processing pipelines. Infrastructure with retry mechanisms, tasks monitoring, and idempotent operations for data consistency etc.

- **Team Managment**: Managed development team of 4 while setting up JIRA workflows and review processes. Oversaw developers and collaborated with product and design teams for feature planning and technical implementation oversight in trends, curations platform.

- **ML & Data Engineering**: Contributed to production ML pipelines for semantic search and trend prediction, implementing N-gram analysis and clustering algorithms for trend deduplication across large-scale social media datasets. Developed end-to-end data pipelines from web scraping to vectorization, integrating embedding systems with vector databases for trends and curation platforms.

  Tech-Stack : Python, FastAPI, PyTorch, MongoDB, AWS, Google Cloud, GCP Queues, Firebase, RunPod, Replicate, Vector Databases, ComfyUI, Microservices Architecture.

PROJECTS

- **Searchy: On-Device Image Search & Management Tool for macOS - (Computer Vision, Swift, Native App Development) - [Link]** :
  - Built a lightweight, entirely on-device image browsing and semantic search application for macOS to address photo management limitations.
  - Implemented CLIP-based semantic search enabling natural language queries over local image collections without cloud dependency.
  - Developed native Swift application with real-time indexing capabilities and user-friendly interface for quick image discovery and management.
  - Features include modular custom backend i.e: allowing user to plug and play their custom scripts, and spotlight-style shortcut control for quick access.
  Tech : Swift, CLIP, macOS Development, Computer Vision, On-Device ML

- **AushadHub: ML-based Medicinal Herb Identification Platform - (Image Processing, Transfer Learning, Google Cloud) - [Link]**:
  - Developed a Medicinal Herb Identification Platform leveraging ResNET50, achieving a testing accuracy of 98% for classification tasks across 30 labels
  - Implemented preprocessing techniques to optimize images before model inference, for efficient and accurate identification of medicinal herbs.
  - Deployed a Flask application as the backend on Google Cloud, serving as an inference endpoint for image uploads.
  Tech : Python, PyTorch & Tensorflow, Keras, Flask, HTML, CSS, GCP