Durgesh Dutt Sinha

AIML Engineer & Full-Stack Developer

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PROFESSIONAL SUMMARY

Results-driven **AI/ML Engineer & Full-Stack Developer** with practical experience building and deploying intelligent web applications, computer vision tools, and machine learning pipelines. Creator of open-source projects including real-time multimodal voice assistants, e-commerce customer segmentation systems, and deep learning image classifiers. Proficient in Python, TypeScript, React, Next.js, FastAPI, and PyTorch, with a track record of delivering clean architectures from concept to live production.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, SQL, HTML5, CSS3, C/C++

AI & Machine Learning: PyTorch, Scikit-Learn, Computer Vision (MediaPipe, CNN), Whisper STT, Gemini API, Pandas, NumPy, K-Means, DBSCAN

Full-Stack & Backend: Next.js, React, FastAPI, Streamlit, WebSockets, Node.js, RESTful APIs, Tailwind CSS

Cloud, Database & Tools: PostgreSQL (Neon), Drizzle ORM, Docker, Cloudflare Pages, Git & GitHub, AWS Educate

FEATURED PROJECTS

J.A.R.V.I.S. — Real-Time Multimodal AI Voice Assistant — GitHub • Live Demo

Tech Stack: FastAPI • Python • WebSockets • React • TypeScript • Whisper STT • Gemini 2.0 Flash • Edge-TTS

- Engineered a full-duplex voice assistant streaming 16kHz audio over bi-directional WebSockets between React and FastAPI backend.
- Integrated Voice Activity Detection (VAD) with Whisper STT and Gemini 2.0 Flash streaming API, paired with Edge-TTS for low-latency voice playback.

RoleRadar — AI Resume Analyzer & Career Intelligence Platform — GitHub • Live Demo

Tech Stack: Next.js • React • TypeScript • Drizzle ORM • PostgreSQL (Neon) • Tailwind CSS • pdf-parse

- Developed full-stack platform parsing candidate resumes (.pdf/.docx) to evaluate alignment against 16 canonical tech role benchmarks.
- Implemented ATS compatibility scoring, keyword density extraction, and structured recommendations with Drizzle ORM persistence.

MarketMatch-AI — Customer Segmentation & Lookalike Analytics Studio — GitHub • Live Demo

Tech Stack: Python 3.11 • Scikit-Learn • Streamlit • Plotly 3D • Pandas & NumPy • Joblib

- Built an end-to-end unsupervised ML pipeline processing 4,000+ retail records using RFM (Recency, Frequency, Monetary) feature extraction.
- Applied K-Means (K=5) and DBSCAN anomaly detection with log-scaling; built an interactive Streamlit UI with 3D Plotly visual projections.

Fashion-MNIST Classifier — Deep Learning CNN Streamlit App — GitHub • Live Demo

Tech Stack: PyTorch • Python • Streamlit • Computer Vision • NumPy

- Trained a custom multi-layer CNN in PyTorch on Fashion-MNIST dataset, achieving ~91.4% test accuracy with dropout regularization.
- Deployed an interactive Streamlit web app enabling users to upload clothing images and receive real-time classification predictions.

EXPERIENCE & FELLOWSHIPS

AI Program Fellow — UNLOX® — Remote

- Constructed and tested containerized AI deployment pipelines; evaluated autonomous agent workflows and machine learning models under technical mentorship.

AI Cohort Member — Be10x — India

- Built prompt-chaining architectures and full-stack AI concept prototypes, demonstrating practical AI productivity automations.

Web Development Intern — InAmigos Foundation (IAF) — Remote

- Developed and maintained responsive web pages and components for non-profit social initiatives, ensuring mobile responsiveness and accessibility.

EDUCATION

Master of Computer Applications (AIML) — Jul 2025 – 2027 (Expected)
Sri Balaji University, Pune
Specialization: Artificial Intelligence & Machine Learning

Bachelor of Computer Applications — Aug 2022 – Apr 2025
Sri Balaji University, Pune
Focus: AI, System Architecture, Prompt Engineering

CERTIFICATIONS & COMMUNITY

- **AWS Educate Emerging Talent Community Member**
  Amazon Web Services (AWS)
- **AWS Educate Machine Learning Foundations**
  Amazon Web Services (AWS)