Kevin Doshi

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Education

Stevens Institute of Technology Hoboken, NJ
Master of Science - Computer Science; GPA: 4.0/4.0 Sep. 2025 - May 2027

- **Courses:** Mathematical Foundations of Machine Learning, Knowledge Discovery and Data Mining, Deep Learning, Natural Language Processing

Professional Experience

Explainable & Controllable AI Lab, Stevens Institute of Technology Hoboken, NJ
Graduate Research Assistant Oct. 2025 - Present

- Designed applied AI systems to support decision-making workflows, focusing on transforming unstructured user interactions into structured, actionable signals for downstream applications.
- Built adaptive ML pipelines using Item Response Theory (IRT) and behavioral modeling to improve personalization, reliability, and interpretability of AI-driven assessments.
- Collaborated with researchers and engineers to deploy and evaluate models across 200+ users, emphasizing model validation, monitoring, documentation, and responsible AI practices.

Indian Institute of Technology Bombay Maharashtra, India
Research Intern Jan. 2024 - Jun. 2024

- Identified critical data integrity crisis in Mumbai's power grid serving 20M+ residents: inconsistent mappings and missing interdependency data prevented fault tracing, leaving utilities blind to cascading failure patterns.
- Built centralized power-system analysis platform that automated grid topology validation and surfaced anomalies across 50K+ interconnected components in real-time with role-based access control and live change tracking.
- Reduced analytical turnaround from hours to sub-second queries for grid health monitoring and anomaly detection—platform currently under adoption review by TATA Power for citywide deployment.

Projects

WaveSplit Audio Denoiser | Deep Learning, Signal Processing Aug. 2024 - Mar. 2025
Extended NVIDIA CleanUNet to address real-world non-stationary noise by introducing SNR-aware adaptive filtering, harmonic-percussive decomposition, and psychoacoustic masking. Achieved +2.3 dB SNR and +0.21 PESQ gains while supporting low-latency streaming inference suitable for production pipelines.

SENTINEL – Temporal ML System | Machine Learning, Graph Modeling Oct. 2025 - Present
Developed temporal machine learning pipelines to analyze large-scale event data and detect complex patterns over time, emphasizing interpretability, scalability, and system integration.

Learnify (Winning Project – Devopia Hackathon) | NLP, Applied Machine Learning Mar. 2024 - Apr. 2024
Built an AI-powered learning platform that converts unstructured PDFs into structured quizzes and recommendations using NLP pipelines. Designed modular ML components to support content understanding, recommendation logic, and future LLM-based agent extensions.

DeepShield (Winning Project – Aeravat Hackathon) | Computer Vision, Audio Processing Jan. 2023 - Mar. 2023
Developed multimodal deepfake detection pipeline combining facial micro-expressions, audio artifacts, and linguistic features. Achieved 96.13% accuracy on compressed and degraded content where single-modality models dropped below 75%.

Publications

A Multi-Stage Framework for Audio Enhancement and Audio Denoising: *(Under review at IEEE Transactions on Audio, Speech, and Language Processing)*

Skills

Programming & Data: Python, Java, SQL, Pandas, NumPy
AI & Machine Learning: Supervised & Unsupervised Learning, Deep Learning, NLP, Generative AI, Feature Engineering, Model Evaluation
LLMs & Agentic AI: Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Prompt Engineering, AI Agents, Copilot-style Workflows
ML Frameworks: PyTorch, TensorFlow, Scikit-Learn, Keras
Backend & Engineering: Django, Flask, FastAPI, REST APIs, PostgreSQL, MongoDB, Git, Linux

Volunteer Experience

- **Teaching Assistant, Distributed Computing** *Mumbai, India*
  Conducted lab sessions for 60+ students on RMI, RPC, and clock synchronization algorithms, graded assignments, and provided technical guidance on distributed system implementation challenges.
- **Head of Finance, IEEE S.P.I.T. Student Branch** *Mumbai, India*
  Managed $15K+ annual budget, secured sponsorships from 8+ industry partners, and oversaw financial planning for 12+ technical workshops and hackathons.