



Makarand Gokhale

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Software Engineer specializing in intelligent and adaptive AI systems with expertise in natural language processing, edge computing, computer vision, and multimodal machine learning applications.

EDUCATION

Bachelor of Technology

4th Year Computer Science and Engineering,
PES University, Bengaluru, Karnataka
B. Tech in Computer Science and Engineering -
Expected Aug 2026
CGPA: 8.15 / 10

Achievements

Head of Music Club of PES.
Cultural Lead and Core Committee Member of Aatmatrisha – 2024, 2025
MRD and Distinction Scholarship Awardee.
Awarded Best Startup by the PES University Center of Innovation and Excellence.
Cognitech - 2025 (Behavior and Psychology Based Hackathon) - Best Performer

INTERNSHIPS

Software Developer Engineer Intern

Smardedge Technologies Private Limited.

June 2025 - August 2025
Pune, Maharashtra

- Designed and deployed a Python-based compliance parser powering a CIS governance platform used by enterprise customers for real-time auditing.
- Contributed to a production-ready, organization-level tool deployed to customers for real-world compliance tracking.

Technical Analyst - Computer Vision Research

Centre of Innovation and Excellence, PES University

January 2024 - April 2024
Bengaluru, Karnataka

- Authored and presented a peer-reviewed paper on CV applications at the PAML Workshop.
- Produced a comprehensive CV report, contributing to institutional research in applied machine learning.

PROJECTS & RESEARCH

Vector Database As a Service

[Ongoing]

Developing a hybrid Vector Database-as-a-Service (VDBaaS) for edge devices, combining low-latency local vector caching with cloud fallback, with predictive embedding prefetching to accelerate semantic retrieval for real-time queries

Unity AI Interaction Assistant (Voice-Enabled LLM Assistant for Unity Game Development)

Built a voice-enabled LLM assistant using LangChain and Google GenAI APIs to generate Unity game scripts from natural language. Designed a speech-to-code pipeline for agent modeling and rapid prototyping using project context and prompt engineering

CIS Compliance Parser & Security Collaboration Portal

Built a CIS Benchmark compliance parser to automatically analyze system configurations and generate rule-mapped reports. Created a web-based collaboration space for security teams to share remediation notes, track audits, and streamline hardening workflows

Group Sentiment Analysis (Mob Emotion AI)

Developed a Vision Transformer - based pipeline with DeepFace to detect and visualize group-level emotion from images. Designed an interactive sentiment visualization tool for crowd behavior analysis in social robotics and ambient intelligence systems.

College Management App (Flutter)

Flutter app managing student, faculty, and admin workflows with Firebase authentication and real-time synchronization.

SKILLS

- Python Programming, HTML/CSS, SQL, Java, JavaScript
- Machine learning
- Deep Learning & Gen-AI
- Object-oriented programming
- Software design
- Back-end frameworks
- Vector Databases, Database Systems
- Front-end frameworks
- Natural Language Processing, LangChain, LLMs, RAG Systems and Tokenization
- Computer Vision, OpenCV and DeepFace
- GPTs, Transformers and Vision Transformers