

Title: Deep Learning Technologist

Domain: Applied Deep Learning & Intelligent Systems Design

Specialization: Multimodal learning, deep architecture construction & optimization, real-time system integration, model behaviour shaping.

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I'm Makarand Gokhale, a Deep Learning Technologist. I specialize in the domain of Applied Deep Learning and Intelligent Systems Design. I design systems that can learn, adapt and meaningfully respond to different modalities of data. My focus is on crafting systems where intelligence is not just a layer, it is a property of the system itself, enabling meaningful interaction with human inputs. I'm particularly interested in how software can exhibit intelligent behaviour through its design, not just its outputs.

Core Focus Areas:

- Multimodal Deep Learning
- Deep Learning Architecture Construction & Optimization
- Real-Time Intelligent System Integration
- Model Behaviour Shaping
- Tooling & Infrastructure

I believe intelligence in computers isn't just about replication of human behaviour, it's about design. When architected correctly, I believe computers can exhibit intelligent behaviour that is elegant, intentional, and transformative. My goal is to dissolve the boundary between humans and computers through practical, functional design rather than imitation. I enjoy processing high-level abstract ideas to product ready code, using a strong foundation in modelling and mathematics to unlock expressive, adaptive computation. This includes building systems that recognize group sentiment, respond to real-time gestures or generate structured outputs that reflect internal model states. My aim is to redefine what machines can perceive and produce.

Key Projects & Research:

- VDBaaS: A long-term vector database platform designed to support hybrid search and AI-first application workflows.
- Mob Sentiment Analysis: Using vision transformers and facial analytics to model emotion at group scale.
- Unity AI Interaction Models: A voice-enabled LLM tool fine-tuned for Unity projects that analyses user queries and project context to generate relevant scripts and image templates.
- Custom Tokenizer Pipeline: A language-grounded tokenizer system which utilizes a next query prediction model to plan for progressive language learning.
- Computer Vision Research & Publication: Worked as a Technical Analyst intern focused on computer vision. Authored a peer-reviewed seminal paper titled *"From Perception to Prediction: A Comprehensive Overview of Computer Vision – Past, Present and Future."* Presented findings at the PAML Workshop, highlighting emerging applications and technological advancements in Computer Vision.

In conclusion, I define my domain not by tools, but by intention. I focus on building systems that learn, interact, and evolve meaningfully in response to human input. Whether it is contributing to research, developing developer-facing tools, or designing complex architectures, I bring deep learning expertise and a systems-focused approach to expand what intelligent software can do. I don't just build AI systems; I build systems that are intelligent by design.