ANSHAY AGARWAL

AI R&D Engineer | Founder | anshayagr@gmail.com | [LinkedIn](#) | [GitHub](#)

R&D-FOCUSED AI ENGINEER

IIT Alumni with 10+ years of experience driving innovation across startups and major tech (Qualcomm, Nvidia, DRDO). Passionate about building autonomous **AI Agents** and applying cutting-edge AI to **Healthcare**. Proven track record of taking novel concepts from research to full-stack implementation.

Stack: Chat & Voice AI Agents, RAG Pipelines, WebSockets (Real-time Audio)

EXPERIENCE

STEALTH AI VENTURE | Founder | AI, Python | Oct 2025 - Jan 2026

- **Real-Time AI Agent:** Architect "Agent on Call," an autonomous voice assistant for Telegram capable of complex, multi-turn conversations with **sub-second latency**.
- Engineered a full-duplex audio pipeline using raw PCM named pipes and **Voice Activity Detection** (**VAD**) effectively creating a "hear-while-speaking" capability.
- Orchestrated **Google Gemini** (LLM), **Faster-Whisper** (STT), and **TTS (Piper, ElevenLabs)** within a highly concurrent asyncio framework to deliver a seamless user experience.
- Developed robust "**heartbeat**" mechanisms and audio state locks to ensure 99.9% connection stability during long-running sessions.

SCHOOLBOOK.AI | Co-Founder, Head of AI and Engineering | AI, Python | Jun 2025 - Sep 2025

- Built a comprehensive "**Visual AI Teacher**" for K-12 education, integrating LLMs with **multimodal** perception for real-time classroom delivery.
- Designed and implemented a **Retrieval-Augmented Generation (RAG)** system over NCERT textbooks using **vector databases** to generate accurate lectures and personalized assessments.
- Engineered multi-step AI behaviors using **LangGraph**, Google **GenAI**, and **Gemini**, enabling the AI teacher to use **tools** and adapt lesson plans dynamically.
- Led the end-to-end development of backend services, frontend integration, and system orchestration, establishing the DevOps and deployment infrastructure.

QUALCOMM | Senior Lead Software Engineer | AI, Python, C++ | Apr 2023 - Mar 2025

- Achieved a **96%** reduction in flicker correction latency for **XR** (35ms → 1.32ms) by inventing optimized **GPU** algorithms.
- Spearheaded the design of novel HDR flows for Premium Tier chips, redefining image quality benchmarks for upcoming hardware.

GREYSCALEAI | Software Engineer | C++, Python, OpenCV | Feb 2021 - Mar 2023

- Built a comprehensive food inspection solution integrating X-ray and RGB cameras with **Deep Learning** models, enabling plug-and-play capability.
- Designed a real-time embedded UI orchestrating communication between hardware sensors and user inputs.
- Led a complete codebase refactoring initiative that streamlined build processes.

NVIDIA | System Software Engineer | C++, Python | Aug 2017 - Jul 2018

- Enhanced Tegra SW platform imaging stack; resolved critical lens shading and CUDA Histogram issues.

DRDO | Scientist | C++, MATLAB, OpenCV | Aug 2013 - Jul 2015

- Engineered solutions for lens shading correction in Thermal Imagers (LREO/MREO), critical for night vision.
- Built a custom Raspberry Pi-based remote controller for Thermal Imagers, eliminating external procurement costs.

PROJECTS

AI-POWERED YOUTUBE VIDEO SUMMARIZER | React Native, LangChain, Vector DB

- Developed a cross-platform mobile app (**Expo**/**React Native**) for podcast and video summarization using **LLMs** and **RAG**.
- Integrated vector databases for semantic search and managed full-stack deployment for real-time inference.

SKILLS

Languages: Python, C++, JavaScript
AI/ML: Agents (LangGraph), LLMs (Gemini, LangChain), RAG, Deep Learning (FastAI, TensorFlow), Computer Vision (OpenCV), ASR (Whisper)
Systems: Git, Linux, Embedded Systems, MQTT, Real-time Audio Processing

ACHIEVEMENTS

- **GRE: 321/340** (**170/170** in Quant)
- **GATE**: Secured All India Rank **423** (**99.998** percentile).
- **IIT-JEE**: Secured All India Rank **3547** (Top **1%** of a million candidates).
- **XII Board**: Ranked in Top **0.1%** nationally; scored **100%** in Mathematics.

EDUCATION

IIT Delhi | M.Tech, Computer Technology | 2015 - 2017
- **Dissertation:** "Thermal Video Stabilization" for night vision systems.
- **Project:** Brain-Computer Interface (BCI) using EEG motor imagery signals for cursor control.

IIT Mandi | B.Tech, Electrical Engineering | 2009 - 2013
- **Dissertation:** Automobile Collision Prevention System
- **Leadership:** Founding Member of Robotics Section; Built IIT Mandi's first robot.

SPECIALIZATIONS

- **Wharton School:** Entrepreneurship Specialization (2021-2022)
- **DeepLearning.AI:** TensorFlow Professional Cert (2020), Deep Learning Specialization (2019)