ABHIJAY KUMAR SHAH

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Education

Vellore Institute of Technology	**Jul 2026 (Expected)**
B.Tech in Computer Science & Engineering	CGPA: 8.44 / 10.0
DAV Public School, Dudhichua	**2019–2021**
Senior Secondary (Class XII)	CGPA: 9.20 / 10.0
DAV Public School, Surya Vihar	**2018–2019**
Secondary (Class X)	CGPA: 9.85 / 10.0

Technical Skills

Languages : C/C++ (OOP, Memory Management, Pointers), MATLAB, MERN stack, Python, Data Structures & Algorithms (DSA)
DSP & Software Design: Signal Processing (FFT, FIR/IIR, Sampling), GUI Development (Qt/React), Low-Latency Execution
Tools & Practices: Git (Version Control), Debugging (GDB/DevTools), Unit Testing, Linux, Concurrency

Projects

MultiSync-VideoPlayer – High-Performance & Playback Engine — *Concurrency, Memory Management, Media Processing*   [Link]
- **Buffer & Memory Control:** Engineered a concurrent media playback engine supporting 9 synchronized streams, optimizing memory allocation to prevent leaks during high-load rendering.
- **Concurrency & Synchronization:** Implemented execution threads to ensure strict synchronization between controls and media frames, maintaining low-latency, stable performance.
- **Fault Tolerance:** Designed robust file validation algorithms and real-time debugging mechanisms to detect stream corruption and handle I/O errors gracefully.

Rately – Interactive GUI & State Management Platform — *Event-Driven Architecture, Data Structures, API Logic*   [Link]
- **GUI Development Logic:** Designed a modular Graphical User Interface (GUI) employing centralized state management, demonstrating robust UI logic directly translatable to frameworks like Qt.
- **Algorithmic Access Control:** Architected scalable backend logic utilizing complex data structures to enforce strict Role-Based Access Control (RBAC) and data isolation.
- **Data Pipelines:** Integrated external data pipelines via RESTful APIs, efficiently processing real-time I/O streams to interact with a context-aware analysis engine.

Scholara – Automated Workflow & Data Validation Engine — *Algorithm Design, File Parsing, Version Control*   [Link]
- **State-Driven Pipelines:** Engineered a strict, state-machine-based data pipeline (Proposal → Approval → Final), utilizing algorithmic validation rules to process data transitions.
- **File Parsing & Analysis:** Integrated an automated analysis engine to parse uploaded document structures, applying pattern matching to generate instant compliance metrics.
- **System Monitoring:** Developed a real-time monitoring dashboard to visualize execution metrics and system throughput, strictly utilizing Git for version control and iterative debugging.

Experience / Leadership – Achievements

CatCatchCode	**catcatchcode.online – Jul 2025 – Present**
Founder & Technical Lead — VIT	[Link]

- Founded an ed-tech initiative providing placement guidance, curated study material, and senior mentorship for students.
- Led a 5-member team to produce 100+ technical learning videos, impacting 100+ students.
- Designed beginner-to-intermediate learning roadmaps for DSA, Full-Stack development, and AI automation.
- Expanded content across LinkedIn, YouTube, Instagram, and GitHub, building an early-stage learning community.

Satsang Vachan Satsang Seva	**satsangvachansatsangseva.online – Sept 2025 – Present**
Co-Founder & Project Lead – Digital Preservation & Social Impact Initiative	[Link]

- Leading a digital preservation initiative to convert decades of archival literature into modern visual and multimedia formats.
- Spearheading a digitization initiative to preserve 50+ years of archival literature for a global community of 200 Million+ followers.
- Collaborating with contributors to produce posters, magazines, podcasts, and animated content for large-scale audiences.
- Applying AI-assisted summarization to transform long-form textual material into concise, accessible visuals.
- Designing a scalable content platform focused on accessibility, maintainability, and positive social impact.

Certifications

MATLAB Onramp & Simulink Onramp Certificates — Oct 2022 [Link]
MERN Full Stack Certificate — Apr 2025 [Link]