

Nikhil Kumar Singh

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EDUCATION

SRM University, AP

B.Tech in Computer Science and Engineering

Navy Children School

Class XII

Navy Children School

Class X

2023 – 2027

CGPA: 9.08 / 10 (Top 5%)

2020 – 2021

88%

2018 – 2019

93%

WORK EXPERIENCE

Research Intern – Tile-Based Adaptive Bitrate Algorithm

May 2025 – July 2025

- Developed a Python-based tile adaptive bitrate algorithm achieving up to 30% bandwidth savings and 15% reduced buffering on VR streaming metrics.
- Designed a reproducible simulation framework eliminating dependence on specialized hardware.
- Evaluated scalability and robustness against baseline algorithms.
- Contributed to research outcomes as a co-author under academic collaboration.

Video-to-Audio Processing System

Sep 2025 – Oct 2025

- Built a media processing pipeline to extract audio from video content.
- Implemented automated vulgar content censoring using audio signal processing.

Currently involved in two ongoing faculty-guided research projects (confidential).

Currently developing an early-stage SaaS product with plans for market launch.

PROJECTS

SAHAY – Elderly Care Assistance Application

2026

- Developed an elderly care application with SOS alerts, daily mood check-ins, and health monitoring features.
- Implemented prescription management using photo capture and scheduled medication reminders.
- Designed passive inactivity detection via daily activity logs compared against personalized average behavior.
- Built secure backend APIs to manage user data, alerts, and real-time notifications.

Inventix AI – Intelligent Research & Patent Analysis Platform

2026

- Built an AI-powered platform for academic research validation and patent novelty analysis using evidence-based workflows.
- Implemented semantic similarity analysis over research papers and patents to classify novelty risk (GREEN/YELLOW/RED).
- Integrated prior-art retrieval from Semantic Scholar and USPTO with transparent, assistive AI outputs.

AI Mental Health Chatbot for Exam Stress

2026

- Built an AI chatbot to provide academic and motivational support using sentiment analysis.
- Detected stress indicators and suggested coping strategies through NLP-based analysis.

Sign Language Gesture Recognition System

2025

- Developed a real-time sign language recognition system achieving 95% accuracy.
- Implemented robust landmark detection under varied lighting conditions.

TECHNICAL SKILLS

Languages: C, C++, Java, Python, Shell Script, PHP, JavaScript

Web Technologies: HTML, CSS

Frameworks: Django, Flask, React

Databases: MySQL, MongoDB

DevOps & Tools: Docker, Git, Linux

ACHIEVEMENTS & LEADERSHIP

- Led development of a Women Safety Android Application (Patent Pending).
- Awarded a 25% Merit Scholarship at SRM University AP.
- Campus Ambassador — Perplexity (2025).
- Secured 2nd Place at Code for Connection.
- Top 20 Teams — Andhra Pradesh Quantum Valley Hackathon.