Aniruddha Shil

aniruddhashil09@gmail.com | linkedin/AniruddhaShil | github.com/aniruddha | +91 7974889450

Education

Vellore Institute of Technology Bhopal University, Bhopal — *September 2022 – Ongoing*
B.Tech, Department of Computer Science and Engineering — ***CGPA : 7.97***

Kendriya Vidyala No.1, Kunjaban, Agartala(CBSE) — *March 2020 – June 2022*
Class XII Central Board of Secondary Education — ***Percentage : 85%***
Class X Central Board of Secondary Education — ***Percentage : 89.8%***

Projects

SimulaCrum — **August 2025 - September 2025**
Text to Image Generator

- Built a React.js web application that generates AI-based images from user prompts using **OpenAI's DALL·E API**, processing requests in ~18–22 seconds.
- Developed a **FastAPI** backend with request validation, error handling, and timeout control, ensuring **99%** successful API calls during testing.
- Implemented state management with **React Hooks**, achieving smooth input-to-output transitions and reducing UI rendering issues by ~25%.
- Designed a **responsive interface** with real-time feedback that maintained 100% compatibility across major browsers.
- Conducted performance optimization, reducing image load time by ~15% and improving accessibility scores in Lighthouse audits.

Tech Stack: React.js, Tailwind CSS, OpenAI DALL·E API, FastAPI

TypeEase — **April 2024 - May 2024**
Gesture-Controlled Virtual Keyboard

- Developed a Python-based application that enables text entry through hand gesture recognition using **OpenCV** and **MediaPipe**.
- Designed fingertip tracking and gesture-to-key mapping with **NumPy** optimization, cutting input latency by ~20% compared to the baseline implementation.
- Evaluated the system on test groups, achieving an average typing accuracy of **87%** and sustaining a typing speed of **12–15 words per minute**.
- Built the system to run on consumer-grade hardware, eliminating the need for external sensors and reducing deployment cost.
- Published research in *IJIRCCE*, **Impact Factor 7.429**, presenting methodology, experimental results, and its potential for improving accessibility tools.

Tech Stack: Python, OpenCV, NumPy, MediaPipe

Technical Skills

Languages: Java, Python, JavaScript, SQL (MySQL), HTML, CSS
Frameworks & Libraries: React.js, Redux, Node.js, Express.js, Bootstrap, Tailwind CSS, Axios
Databases: MySQL, MongoDB
Web Technologies: RESTful APIs, JWT Authentication, JSON, Cross-Browser Compatibility, Responsive Design
Tools: Git, GitHub, Postman, VS Code, Vite, NPM, Linux CLI
CS Core: Data Structures & Algorithms, Object-Oriented Programming, DBMS, Networking, Cloud Fundamentals

Achievements

- Published research on **gesture-controlled virtual keyboards** in *IJIRCCE* (Impact Factor 7.429), evaluated across multiple user test cases.
- Demonstrated the system's potential to **improve digital accessibility** for users with motor impairments through prototype testing and performance analysis.

Certifications

- Applied Machine Learning in Python – University of Michigan (Coursera), 2025
- Full Stack Developer MERN – SmartBridge, 2025