

HARSHIT SONI

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📁 [Portfolio](#)

Education

IIIT Vadodara (International Campus Diu)

November 2022 – May 2026

- Bachelor of Technology in Computer Science
- Current CPI: 7.94/10

Technical Skills

- **Languages:** C, C++, Java, Python (NumPy, Pandas, Matplotlib), HTML, CSS, JavaScript, TypeScript.
- **Frameworks & Libraries:** Node.js, Express.js, React.js, Next.js, Tailwind CSS, PyTorch, TensorFlow.
- **Databases:** MongoDB, MySQL, PostgreSQL.
- **Tools & Platforms:** Git, GitHub, VS Code, Google Colab, Jupyter Notebook, Selenium.

Projects

Natural-Sounding Text-to-Speech System | *Python, PyTorch* [\[Live Demo\]](#)

December 2024

- **Core Tech:** Engineered end-to-end TTS pipeline using **Tacotron 2** (attention-based seq-to-seq) and **HiFi-GAN** (neural vocoder) pretrained on LJ Speech dataset, then personalized with custom voice dataset of 200 sentence.
- **Key Achievement:** Achieved **4.2/5 MOS score** through spectrogram enhancement and prosody modeling techniques.
- **Performance:** Optimized inference speed by **45%** through efficient PyTorch pipelines, memory management, and resource-conscious model architecture.
- **Deployment:** Created intuitive **Gradio** interface and deployed on **Hugging Face Spaces**, reaching 500+ users.

Image Contrast Enhancement System | *MATLAB, Image Processing* [\[GitHub Repo\]](#)

October 2024

- **Core Tech:** Implemented **4 mathematical enhancement algorithms** including Histogram Equalization (HE), Bi-Histogram Equalization (BHE), Fuzzy Histogram Equalization (FHE), and Fuzzy Bi-Histogram Equalization (FBHE).
- **ML Approach:** Developed custom **Convolutional Neural Network** as an alternative method alongside traditional mathematical enhancement algorithms, with superior benchmark performance of 90% accuracy.
- **Key Achievement:** Improved image clarity by **40%**, preserving brightness levels and reducing noise.

Hostel Gate Entry Management System | *React, TypeScript, Supabase, Tailwind CSS* [\[Live Demo\]](#)

November 2023

- **Core Tech:** Architected full-stack application to streamline student entry/exit tracking at campus gates with real-time monitoring, benefiting 250+ students.
- **Key Achievement:** Reduced manual logging time by **80%** through simplified student ID-based check-in/check-out process.
- **Data Management:** Designed secure database schema, enabling **10,000+** log entries without performance degradation.

Relevant Coursework

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|--------------------|---------------------------|----------------------|------------------------|
| • Machine Learning | • Artificial Intelligence | • Data Structures | • Software Engineering |
| • OOPS | • Database Management | • Computer Networks | • Operating System |
| • Image Processing | • Computer Architecture | • Algorithm Analysis | • Computer programming |

Achievements & Certifications

- Completed **NVIDIA's** training on fundamentals of deep learning. [\[Certificate\]](#)
- Finished **Deloitte's** Technology Job Simulation 2025, gaining practical insights into tech consulting. [\[Certificate\]](#)
- Achieved a 4-star rating on **CodeChef** through consistent participation in coding contests. [\[Profile\]](#)
- Secured **3rd** position in Code Voyage 2024, an **inter-IIIT coding competition**. [\[Certificate\]](#)

Roles & Responsibilities

Technical Committee, IIITV-ICD

July 2024 – April 2025

Member

Diu, India

Essence Literary Club IIITV-ICD

December 2023 – April 2025

Secretary

Diu, India