Smit Patel

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Education

Government Engineering College, Bharuch — Sept 2022 – May 2026
Bachelor of Engineering in Computer Science — *CGPA: 7.37*

Sett R.J.J High School, Valsad — July 2022
GSEB Class 12 — *Percentage: 72%*

Sett R.J.J High School, Valsad — July 2020
GSEB Class 10 — *Percentage: 81%*

Projects

Household Waste Classification

- Developed deep learning models using **VGG16** for household waste classification into 12 classes including paper, plastic, metal, cardboard, clothes, and glass types.
- Achieved **94.17%** test accuracy by fine-tuning VGG16, unfreezing from 'block5 conv1', applying reduced learning rate, and using early stopping.
- Preprocessed and cleaned **15000+ images** by removing corrupt/blurry files, resizing to **224x224**, and applying data augmentation and normalization for improved model generalization.
- **Techstack:** Python, Keras, NumPy, Scikit-learn, Matplotlib, OpenCV, VGG16

House Price Prediction

- Designed and implemented a machine learning pipeline using **Random Forest Regressor** to estimate house prices based on real-world Bengaluru housing dataset containing features like location, total sqft, number of bathrooms, and BHK to model property prices.
- Cleaned and preprocessed data by handling inconsistencies, removing outliers, and engineering features such as total sqft, BHK, price per sqft, and grouped location categories; achieved Train R^2: **0.95** and Test R^2: **0.78**.
- **Techstack:** Python, Pandas, NumPy, Scikit-learn, Matplotlib, Random Forest

Portfolio Website

- Designed and developed a responsive personal portfolio website using **HTML, CSS, and JavaScript** to showcase skills, projects, and achievements in an organized and visually appealing manner.
- Implemented a clean UI layout with smooth navigation, interactive buttons, and **responsive design** principles to ensure accessibility across desktop and mobile devices.
- Incorporated section-based structure (Home, About, Skills, Projects, Contact) and smooth scrolling effects to enhance user experience.
- Focused on clean code structure and reusability, demonstrating practical knowledge of frontend fundamentals and attention to detail.
- Live: smitpatel-14.github.io/Portfolio-website/
- **Techstack:** HTML, CSS, JavaScript

Achievements

- Represented the college at the national-level **Ideathon 2025** by GTU Ventures, showcasing practical AI-driven solutions for sustanability.
- Qualified for national-level **IEEE Signal Image Processing Competition**, applying image processing techniques to real-world problems.
- Selected for **Smart India Hackathon 2024** for developing an AI-based Crop Pest and Disease Detection system using deep learning and computer vision.

Technical Skills

Languages: C/C++, Python, Java, SQL, JavaScript, HTML, CSS
Frameworks: TensorFlow, Keras
Developer Tools: VS Code, GitHub, PyCharm, IntelliJ, Jupyter Notebook, Google Colab
Libraries: NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, OpenCV