PARTH NARESH LATHIYA

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EDUCATION

Bachelor of Technology in Computer Engineering **Sep 2022 - Present**
Sarvajanik College of Engineering and Technology, Sarvajanik University
- Honors in Artificial Intelligence and Machine Learning.
- CGPA - 7.84/10.00

Higher School **2020 - 2022**
The Radiant International School
- Science (Phy, Chem, Mathematics).
- Grade: 82%

PROJECTS

Colorizer **Mar 2025 - Apr 2025**
Individual Project
- Developed a deep learning-based image colorization tool using a U-Net architecture, capable of generating colorized images from grayscale inputs.
- Utilized the LAB color space to predict the ab channels, combining them with the original L channel to generate realistic colorized outputs.
- Preprocessed datasets, including splitting into training, validation, and test sets, to train the model for colorization tasks.
- Implemented image colorization pipeline, including training and inference workflows, for both single and batch image processing.
- Achieved a model that processes grayscale images at 256x256 resolution and outputs colorized versions with high fidelity.
- Designed and executed model training, using PyTorch, with results displayed alongside original images for comparison.
- Demonstrated the model's ability to generalize by processing various grayscale images (appx.1,18,000), highlighting potential use in automatic image restoration and enhancement tasks.

Life in Space (NASA Space Apps Challenge 2024-Surat region) **Oct 2024 - Oct 2024**
Team Member
- Built a 2D survival game where the player controls an astronaut who must manage oxygen, power, and health to stay alive.
- Used Python and Pygame to handle movement, item collection, and basic game logic like score tracking and game-over conditions.
- Added features such as increasing difficulty over time, system failures, and simple menus for instructions and scoring.

Air Type | Gesture-Controlled Virtual Keyboard & Air Canvas **Aug 2024 - Aug 2024**
Individual Project

- Built a gesture-controlled virtual keyboard and drawing interface using hand tracking.
- Enabled real-time text entry and freehand drawing without physical input devices.
- Added support for special keys (ENTER, SPACE, BACKSPACE) and mode switching via open palm gesture.
- Developed AirType as a variant of earlier virtual keyboard and air canvas projects.

Air Canvas **Jul 2024 - Aug 2024**
Individual Project

- Created a virtual drawing app where users draw using hand gestures detected via webcam.
- Implemented real-time color switching, canvas clearing, and text recognition using Tesseract OCR.
- Integrated finger-tracking with gesture-based controls using MediaPipe.

Virtual Keyboard **Jun 2024 - Jul 2024**
Individual Project

- Developed a virtual keyboard that uses hand gestures captured via webcam to simulate keypresses in real time.
- Implemented hand and finger tracking using MediaPipe and cvzone to detect pointing and pinching motions.
- Designed an interactive on-screen keyboard with hover and press feedback, including support for space, enter, and backspace keys.
- Utilized pynput for triggering system key events and OpenCV for rendering the visual interface.

Face Anti-Spoofing **Apr 2024 - May 2024**
Individual Project

- Built a face anti-spoofing system using a YOLO-based model to classify faces as real or fake in real-time via webcam.
- Implemented data collection, automatic dataset splitting, and model training pipelines, including blur-based filtering for better input quality.
- Trained the YOLO model on custom-labeled data and used it for live inference with adjustable confidence and blur thresholds.
- Organized project with modular scripts and a structured dataset folder system for easy experimentation and reproducibility.

Volume Controller using Gesture **Dec 2023 - Dec 2023**
Individual Project

- Built a system to control PC volume using hand gestures by tracking thumb-index finger distance.
- Used MediaPipe for hand landmark detection and Pycaw to interface with system audio.
- Added real-time visual feedback with dynamic volume bar and gesture overlays.

ADDITIONAL INFORMATION

- **Technical Skills:** Python, SQL, HTML, CSS, NumPy, Pandas, Project Management
- **Languages:** English, Hindi, Gujarati
- **Certifications:** Python for Beginners, Machine Learning with Python
- **Awards/Activities:** Regional Winner NSAC2024, Treasurer IEEE SPS Student Branch, Lead Coding Club