

SOURISH PHATE

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Education

Veermata Jijabai Technological Institute , Mumbai

Third Year Bachelor of Technology in Computer Engineering | CGPA : 8.02

Aug. 2023 – Present

New Bombay City School

CBSE : 96.2%

Jun. 2021 – Jul. 2023

Work Experience

Google Summer of Code ↗ | ML4SCI ⚡

Open Source Software Developer | Python, PennyLane, Tensorflow, Pytorch

Jun. 2025 – Oct. 2025

Mumbai, Maharashtra

- Designed a **quantum machine learning** based pipeline for characterizing exoplanet atmospheres using simulated transmission spectra and benchmarking with classical machine learning methods.
- Implemented dimensionality reduction of spectral data using **Autoencoder** and **Quantum Amplitude** encoding .
- Applied **K-Means** clustering and visualization to compare **quantum vs. classical** encoded feature representations of atmospheric gas concentrations.
- Developed a **quantum-classical hybrid model** for predicting atmospheric gas concentrations, achieving an average **R² of 0.82** compared to **0.85** for the classical baseline, highlighting the representational potential of quantum layers.

Projects

Lip Reading ⚡ | Python, TensorFlow, OpenCV

Jul. 2024 – Oct. 2024

- Developed a deep learning model in **TensorFlow** , combining **3D CNN** and **LSTM** to interpret spoken words based on lip movements .
- Utilized **Haar cascade classifier** for face extraction and **OpenCV** for precise lip region extraction from video frames, preparing data for model processing.
- Achieved **72%** accuracy through extensive hyperparameter tuning and optimized evaluation.
- Enabled real-time detection for live use and tested the system on online videos to validate accuracy.

Captcha 2.0 ⚡ | Python, Javascript , Tensorflow, OpenCV

Aug. 2024 – Sept. 2024

- Developed an AI-driven CAPTCHA alternative that enhances security while providing a smoother user experience.
- Utilized browser fingerprinting using a **Random Forest Classifier** for real-time user screening to effectively identify humans and bots.
- Integrated an **OpenCV**-based secondary verification layer to strengthen user authentication when confidence is low.
- Enhanced for smooth real-time detection, minimizing obstacles for real users and maintaining accessibility.

Relevant Coursework

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|------------------------|---------------------|---------------------------|-------------------------|
| • Data Structures | Algorithms | • Software Engineering | • Computer Organization |
| • Discrete Mathematics | • Deep Learning | • Artificial Intelligence | • Theory of Computation |
| • Design and Analysis | • Operating Systems | • DBMS | • Linear Algebra |

Technical Skills

Languages: C/C++, Python, HTML/CSS

Developer Tools: VS Code, Google Colab, Git/GitHub, Jupyter Notebook

Technologies/Frameworks: Tensorflow, Pytorch, OpenCV, Keras, Numpy, Pandas, PennyLane

Leadership / Extracurricular

Department Manager | Enthusia, VJTI

Sept. 2023 – Feb. 2025

- Responsible for organizing, overseeing of sports committee operations, managing teams and executing inter-departmental and inter-college sports events as part of VJTI's annual sports fest.

Mentor/Execution Head | Project X, VJTI

Apr 2025 – Present

- Actively mentoring junior students on machine learning fundamentals and guiding them through the development of a multilingual **Speech to Text Translation** ↗ project, covering model design, training, and deployment.
- As Execution Head, managing the overall committee operations, coordinating project timelines, delegating technical responsibilities, while ensuring smooth execution of all related activities and milestones.

Achievements

- Selected as an open source contributor for **Google Summer of Code** (GSoC) 2025 with ML4SCI.
- Secured 3rd position in Turing Test competition during **Codeverse'25** held by **COC VJTI**.
- Successfully completed **Hacktoberfest'24** earning all 4 badges across all levels of participation.
- Secured Bronze Medal in International English Olympiad (IEO).