Yash Satish Padale

# Phone: +91 8668780118

**Email:** [**yashpadale108@gmail.com**](mailto:yashpadale108@gmail.com) **LinkedIn:** https://[www.linkedin.com/in/yash-](http://www.linkedin.com/in/yash-)padale76b8b5254/

**GitHub:** https://github.com/yashpadale

# Projects:

**Object Detection on Architectural Floor Plan:**

* Developed an object detection system for architectural floor plans using YOLOv8 model, achieving high accuracy in identifying elements like columns, walls, doors, and windows.
* Utilized PyTorch for model training, YAML for dataset organization, and Streamlit for web UI, ensuring efficient development and user-friendly interface.
* Demonstrated system's capabilities through a Streamlit web application enabling users to upload floor plan images, adjust detection parameters, and export results to CSV.
* Contributed to architectural design optimization, construction planning, and real estate evaluation by automating analysis of floor plans, enhancing efficiency and accuracy in these domains.

# Used Transformer Model for creating chatbot:

* + Created a robust solution to use multi head attention model to train on sequence to sequence models for creating a chatbot by referring to research paper- Attention is All you need using Keras.
  + Designed the model with an encoder-decoder structure to handle the sequence- to-sequence nature of conversational data.
  + Applied text tokenization techniques to convert conversational data into numerical format.

# Used Open Cv :

* + Developed an innovative web-based attendance management system leveraging OpenCV for facial recognition and liveness detection, ensuring robust and secure attendance marking. The system is built using Flask for backend development and integrates various technologies to provide a comprehensive solution.
  + Connected the application to Google Sheets for storing attendance data, providing a cloud-based solution for easy access and management.
  + Employed HTML5 Geolocation API to capture the latitude and longitude of the user’s location at the time of attendance marking.
  + Utilized Haar cascades and deep learning models for accurate face detection.

# Created speech to text model:

* + Developed an advanced speech-to-text model using Keras to convert spoken English into written text. The project involved extensive data analysis on audio spectrograms and text transcripts, implementing cutting-edge techniques such as custom learning rate schedulers and attention mechanisms to enhance model performance.
  + Used Custom Learning Rate scheduler and learnt the casual attention mechanism and greedy attention mechanism .

# Trained Transformer model To mimic writing Style:

* + Trained a Transformer model using Keras to mimic the writing style of J.K. Rowling, focusing on capturing the linguistic nuances of the Harry Potter series.
  + Achieved notable success in generating text that is not only grammatically correct but also stylistically consistent with the author's unique style.
  + Implemented advanced sequence-to-sequence learning techniques, enabling the model to predict the next 5 to 6 tokens accurately.
  + Applied text augmentation techniques to enhance the diversity and richness of the training data, improving model performance.

# Trained Transformer model To Transliterate:

* **Model Training and Implementation:** Trained a Transformer model using Keras to convert Marathi sentences into English transliterations, focusing on phonetic accuracy.
* **Data Collection and Preprocessing:** Manually collected and preprocessed a dataset of Marathi sentences with corresponding English transliterations, applying normalization and tokenization techniques.
* **Evaluation and Performance:** Evaluated the model's performance, achieving high accuracy in phonetic consistency and transliteration accuracy.
* **Practical Application:** Developed an application to convert Marathi sentences into English transliterations, providing documentation and use cases to demonstrate effectiveness.

# Experience:

1. **Data Science Intern at Algoanalytics , where I quantized then finetuned small language models and compared their performance for the task of news summarization. Worked with api integration to get news from magazines, newspaper .**
2. **Machine Learning Intern at Excelize . Worked on computer vision for task of image annotation using yolov8 . Worked on creating annotated data using Roboflow.**

# Education:

1. **Bachelor in Data Science , Department of Technology , Savitrabai Phule Pune University [2022-25]**
2. 12 th Std – Aditya Horizon English Medium School (Mahrahstra Board) – 84.83 % - Subjects -Physics, Chemistry , Maths,Geography ,English , IT **[2021-22]**
3. 10 th Std – The Orchid School – 84.80 % CBSE **[2019-20]**

# Achievement:

1. **Won Hackathon Conducted at Savitrabai Phule Pune University of 2023**
   * Created a naïve bayes model to classify text based on their class and called diff functions which would do the operations on data whether csv , excel , json etc with help of pandas library and matplotlib and seaborn to create visuals and connected the frontend to backend , designed the UI , managed the storage and retrieval of files uploaded by user.

# Won Hackathon Conducted at Savitrabai Phule Pune University of 2024

* + Created a Transformer model from numpy , keras , tensorflow and trained it on customer support conversation so that the model can automate customer conversation text based. Which can later be scaled for powering the conversation of customer call centre service automation through AI .

# Meri Maati Mera Desh (MMMD), November 2023:

* + Guinness World Record in name of University of Pune for submission of largest count of selfie images as a single album. Net count of over a million selfie images; 1,042,538 selfie portraits of a total of 2,571,172 self-portraits processed and validated during the “Meri Maati Mera Desh” Campaign in a time span of 20 days with a team of 190 volunteers.
  + Core member of a web based development team working on creation and maintenance of Python Stream lit library for segregating Good, Bad and confused selfies.
  + In-charge of overall management of workflow and delegation of tasks and Instrumental in data pre-processing, handling, distribution and verification
    - Felicitated by PMO, Chief Minister of State and other dignitaries.

# “Shantata Punekar Vachat Ahe”, December 2023:

* + Total of 11,546 videos were submitted after processing to the Guinness World Records Council similar to the MMMD Project.
    - 11546 videos of 13696 collected validated after auditing, efficiency of 84.3% achieved.
    - In-charge of overall management of workflow and delegation of tasks.
    - Processing done to check duplication, runtime greater than 30 seconds,
  + A cumulative count of the same submitted as a single album with the video recorded during 14th December in a 1-hour window.

**Languages:** English, Hindi, Marathi

# Interests:

* Transformer models.
* Neural Network Architecture
* Computer Vision
* ASR (Automatic Speech Recognition)
* GAN
* Diffusion models

# Personal Details:

Name: Yash Satish Padale DOB: 14.06.2004

# Declaration:

It is to certify that all the information provided above is true in all aspects and is a thorough reflection of my professional capabilities and skills.

Place: Pune, Maharashtra Date: 07/06/2024