VITHIKA PUNGLIYA

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Address: 703, The Orion Residency, Salisbury Park, Pune (411037), Maharashtra, India.

Objective: Dedicated student seeking to pursue a master's in computer science with a specialization in Artificial Intelligence.

EDUCATION

VISHWAKARMA INSTITUTE OF TECHNOLOGY *Pune, India*

Bachelor of Technology in Artificial Intelligence and Data Science *Expected May 2024*

Cumulative GPA: **9.5/10.0** (Cumulative of 6/8 semesters)

Relevant Coursework: Engineering Mathematics, Discrete Structures & Automata Theory, Statistics Inference, Data Science, Advanced Data Structures, Computer Organization and Architecture, Database Management & Data Mining, Computer Networks, Object Oriented Programming in Java, Machine Learning, Artificial Intelligence, Operating Systems, Cloud Computing, Deep Learning, Complexity of Algorithms.

EXPERIENCE

The Robotics Forum, VIT- Robosoft. *Pune, India*

Technical Head| Machine Learning Domain *June 2021 – June 2022*

- Led a workshop on Deep Learning and Fundamentals of Java Programming with 80+ participants.
- Worked on Machine Learning and Deep Learning Projects:
  1. Traffic Sign Classification using CNN.
  2. Bird Sound Recognition using Transfer Learning.
  3. Chatbot using LSTM Neural Networks.

WeekendAI *Pune, India*

Data Science Intern| Generative AI *March 2023 – June 2023*

- Project: Retrieval Question Answering System
- Tools & Libraries: Cohere, SpeechRecognition, PyPDF, Langchain, ChromaDB, Streamlit
- Skills: Prompt Engineering

Research Assistant| Generative AI

- Co-author of the book titled- "Generative AI for everyone". (To be released in January 2024)

Wolters Kluwer Pvt Ltd India. *Pune, India*

Data Science Intern| CIOX, Financial and Corporate Compliance *July 2023 – Dec 2023*

- Project: CodeSense- Perfecting fine-tuning methods for large language models in domain-specific contexts.
- Project: PDF Quality Assessment & Analysis
- Tools & Libraries: AzureOpenAI, FastAPI, OpenCV
- Skills: Fine Tuning of Large Language Models, Image Processing

PROJECTS

A Hybrid Approach for Deep Learning based Video Classification and Captioning using a Novel Key Frame Extraction Technique

- Inspired by ISRO | Smart India Hackathon 2022
- To generate metadata i.e., the labels of every video using Image Processing and Deep Learning.
- To generate Context-based Captions of the Videos using Deep Learning.
- To categorize the all-video programs into multiple genres using a fully labelled dataset.

Tools and Libraries: OpenCV, TensorFlow, Keras, PIL, GloVe

Deep Learning Based Application for Fresh Produce Yield and Price Forecasting Based on Station-Based Soil Parameters.

- Inspired by Mitacs | University of Waterloo, Canada
- The project is a multivariate time series problem statement which is under current research in the University of Waterloo, Canada.
- The price and yield of Strawberries are being forecasted using advanced Deep Learning techniques like LSTM.
- Furthermore, a comparison is drawn between conventional statistical methods and Deep learning Methods.

Tools and Libraries: Matplotlib, Tableau, Pandas, NumPy, Seaborn, TensorFlow, Keras.

Blight Ticket Compliance Prediction

- Inspired by "Applied Machine Learning" course by University of Michigan.
- The project aims to find the compliance towards Blight Ticket being paid on time or not.
- 8 Regressors and 8 Classifiers to perform the above-mentioned problem and have got a Highest AUC score of 0.806.
- Important take away from this project is that Regressors can be used as Classifiers for performing Binary Classification and achieve at par results.

Tools and Libraries: Excel, NumPy, Pandas, scikit-learn

Classification of Financial Regulations using Multilabel Natural Language Processing

- Inspired by Data Solve Hackathon organized by Wolters Kluwer India Pvt. Ltd
- The given dataset relates to regulatory updates for providers of banking, insurance, and financial services that have been made public by various regulators.

- We developed NLP models to analyse the content of the Name and Summary of each regulatory update and classify it.
- An ensemble of LGBM + Random Forest gave us the highest F1 Score in the competition.
Tools and Libraries: Nltk, scikit-learn, Pandas, Regex.

SageConv Graph Neural Network Model for Multimodal Regression using a Customised Dataset
- Inspired by Google Quest Kaggle Competition
- Utilizing the Google Quest dataset, the study explores SAGEConv GCN configurations, attaining a promising R2 score of 0.65 and underscoring GNNs' NLU potential for future research.
Tools and Libraries: PyTorch- Geometric, PyTorch, NetworkX, Spacy, Pandas, SciPy.

AI-powered Legal Documentation Assistant
- Inspired by Ministry of Law and Justice | Smart India Hackathon 2023
- AI Based Document drafting of documents while removing legal jargon
- Portal for connecting clients with lawyers and Chat Assistant for answering Legal Queries and understanding Laws of India.
Tools and Libraries: Django, LangChain, GPT-OpenAI, Speech Recognition, ChromaDB, SQLite3, GitHub

PUBLICATIONS & CONFERENCES

1. Procedia Computer Science Journal, Elsevier, International conference on Machine Learning and Data Engineering (ICMLDE 2023). SAGEConv Graph Neural Network Model for Multivariate Regression using Google Quest Dataset. (In Press)
2. S. Lambor, V. Pungliya, R. Bhonsle, A. Purohit, A. Raut and A. Patel, "Sugarcane Leaf Disease Classification using Transfer Learning," 2022 IEEE Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI), Gwalior, India, 2022, pp. 1-4, doi: 10.1109/IATMSI56455.2022.10119309. Link
3. A. Mankawade, V. Pungliya, R. Bhonsle, S. Pate, A. Purohit, and A. Raut, "Resume Analysis and Job Recommendation," 2023 IEEE 8th International Conference for Convergence in Technology (I2CT), Lonavla, India, 2023, pp. 1-5, doi: 10.1109/I2CT57861.2023.10126171. Link
4. Vayadande, K., Raut, A., Bhonsle, R., Pungliya, V., Purohit, A., & Pate, S. (2022). Efficient system for CPU metric visualization. 3 c TIC: cuadernos de desarrollo aplicados a las TIC, 11(2), 239-250. Link
5. Lecture Notes in Electrical Engineering. Conference: 2nd International Conference- WOMEN RESEARCHERS IN ELECTRONICS AND COMPUTING (WREC). A Hybrid Approach for Deep Learning based Video Classification and Captioning using a Novel Key Frame Extraction Technique- (In Press)
6. Vayadande, K., Raut, A., Bhonsle, R., Pungliya, V., Purohit, A., & Ingale, V. (2023). Secured Ticketless Booking System to Monuments and Museums Using Cryptography. In Intelligent Communication Technologies and Virtual Mobile Networks (pp. 373-385). Singapore: Springer Nature Singapore. Link
7. 2nd International Conference on Artificial Intelligence and Sustainable Computing for Smart Cities. (AIS2C2). Prediction of Blight Ticket Compliance using Different Regression and Classification Models (In Press)

VOLUNTEER EXPERIENCE

Pune Ploggers: Plogging drives are carried out on the weekend and the waste on hill slopes and riverbanks is gathered.
Green Hills: With the help of this organization, we have planted around 1000 trees on the hill slopes around Pune.
ReBooks: This organization collects used books and distributes them amongst the needy. This was partnered with MyPustak.com and the books were made available on their website as well.

ACHIEVEMENTS

- Achieved the highest academic standing in the current batch, attaining a cumulative GPA of 9.5/10
- Received the honor of Ms. Freshers- VIT, 2020 in Freshman Year, triumphing over 500 accomplished participants in the competition.
- 1st Runner Up at Data Solve (A 2-week Machine Driven Based Hackathon) India, 2022, organized by Wolters Kluwer, India.
- Honored with the award of "Remarkable Academic Achievement" by Vishwakarma Institute of Technology.
- 1st out of 210+ teams at the Internal Smart India Hackathon (2022 &2023) conducted at Vishwakarma Institute of Technology.
- Honored by the Department of Artificial Intelligence and Data Science for service as a Board of Studies member, contributing to curriculum development and academic policy.
- Served as the Extracurricular Secretary on the College Council, orchestrating a diverse range of engaging student activities.
- Led as Convener of the Entrepreneurship Development Cell (V-EDC) at VIT Pune, driving initiatives to cultivate innovation and entrepreneurial spirit among students.

CERTIFICATIONS

- Applied Machine Learning, Applied Text Mining and Data Science, Applied Plotting, Charting and Data Representation by University of Michigan.
- Fundamentals of Deep Learning by Nvidia.
- Fundamentals of Linux and Data Analytics and Cloud Computing by Vodafone.
- Math Skills for Data Science by Duke University.
- ChatGPT Prompt Engineering for Developers, LangChain for LLM Application Development, Finetuning Large Language Models, How Diffusion Models Work by DeepLearning.AI.