Jinal Swarnakar

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EDUCATION

JK LAKSHMIPAT UNIVERSITY, JAIPUR   2020 – 2024

Bachelor of Technology, Computer Science and Engineering

- Current CGPA – 7.9 (till 6th sem)

IIT, GANDHINAGAR (4th sem, under student exchange program)   2022 – 2022

Bachelor of Technology, Computer Science and Engineering

- GPA-4

TAGORE PUBLIC SCHOOL, JAIPUR   2019 – 2020

Physics, Chemistry, Mathematics, and Information Practices

- Percentage - 88%

TECHNICAL SKILLS

- Python
- Machine Learning
- Data Analysis
- Natural Language Processing
- Looker Studio
- Google Charts
- Django
- Flask
- Big Data
- Bloch chain
- FastAPI
- HTML\CSS\JS
- Spark
- Java
- Root Cause Analysis
- Operational Research

PROJECTS

MULTILINGUAL PII MASKING USING DISTILBERT: A Named Entity Recognition Approach   March 2024 – April 2024

- A comprehensive solution designed to automate the masking of Personally Identifiable Information (PII) in multilingual text using Named Entity Recognition (NER) techniques.
- The platform leverages AI technologies to accurately identify and mask PII entities, ensuring data privacy and compliance. Additionally, it provides functionality for custom inference to mask PII in user-provided text.
- Created a custom NER model using DistilBERT tailored for multilingual PII masking.
- Used FastAPI for creating an API and deployed it on the Hugging Face Hub.
- Tools used: **Python, Pandas, scikit-learn, Transformers, Hugging Face, FastAPI, TensorFlow, PyTorch, seqeval, Sklearn**

GENERATIVE-AI INTERACTIVE DASHBIARD   February 2024 – March 2024

- Developed an interactive dashboard generator for data visualization and analysis.
- Enabled users to upload CSV datasets and receive dynamic insights through chatbot interaction.
- Leveraged AI technologies to provide detailed, accurate, and tailored data visualizations based on user queries.
- Integrated a custom ChatGPT model for generating insights and interacting with users.
- Created the backend, and linked frontend and backend endpoints together.
- Tools used: **Python, HTML, CSS, JavaScript, Socket.IO, OpenAI.**

PROMPT RFP: GENERATIVE AI ASSISTANCE   October 2023 – February 2024

- A comprehensive solution designed to automate the generation of Project Proposal (RFP) based Statement of Work (SoW) documents.
- The platform leverages AI technologies to create detailed, accurate, and tailored first round of proposal documents. Also, Providing the internal team tol ability to iteratively edit the generated document as needed.
- Created Custom ChatGpt model.
- Created backend, databases, Connected/ Linking frontend and backend Endpoints together.
- Connecting the application to MySql cloud database.
  Tools used: **Python, PyQt5, FastAPI, MySQL Cloud, OpenAI, Tensorflow, Keras, NLTK, K-Train**

MARINE-GPT: A fully automated website for the maritime industry   July 2023 – December 2023

- Generative AI Website: Develop a website using generative AI for the maritime industry, offering information on ships, routes, and freight rates.
- Optimistic Chatbot Integration: Implement an optimistic chatbot with natural language processing to provide a user-friendly interface and assist with inquiries.
- Geospatial Visualization: Enhance user experience with interactive maps, allowing real-time tracking of ships and exploration of maritime data.
- Real-time Data Updates: Utilize a robust tech stack for seamless integration of diverse data sources, ensuring the platform provides up-to-date information.
- Scalable and Secure Architecture: Choose a scalable, cloud-based tech stack with Python, Django or Flask, TensorFlow or PyTorch, and AWS or Azure for secure and reliable platform growth.
- Tools used: Python, HTML, CSS, Django, Google Maps API, JWT, Docker, ChatGPT, Model Zoo, Pytorch

FASHION RECOMMENDATIONS   September 2023 – December 2023

- This project aimed to develop a computer vision model that generate dresses according to different body shapes. We
- were able to develop an optimizer which improved the model's accuracy to 92%.
- Tools used: **Python, Pytorch, HTML, CSS.**

WATER LEDGER   September 2023 – November 2023

- This project aimed to develop a Blockchain (Ethereum) based system to manage and track water-related data, transactions, or information. It also follows some like auction of water system for trading too.
- Tools used: **Smart Contract.**

BOOK RECOMMENDATION SYSTEM   April 2023 – June 2023

- Design a user-friendly web interface allowing users to input preferences such as author names, genres, and customer reviews to personalize book recommendations.
- Integrate collaborative filtering algorithms to analyze user behavior and preferences, enhancing the recommendation system based on similarities with other users.
- Incorporate popularity filtering algorithms to recommend books based on overall popularity and trends within the user community.
- Implement real-time analysis of customer reviews to dynamically adjust recommendations, considering user sentiments and evolving preferences.
- Build a scalable and responsive tech stack using technologies like Python, collaborative filtering libraries, and database management systems for efficient handling of user data and recommendation updates.
- Tools used: **HTML, CSS, JavaScript, and Flask (web app).**

DISEASE DETECTION WITH THEIR MULTIPLE SYMPTOMS   February 2023 – April 2023

- This project aimed to develop a disease detection system that utilizes machine learning algorithms to analyze patients.
- Gather a comprehensive dataset of patient symptoms, ensuring diverse and relevant information for training the machine learning model.
- Employ machine learning algorithms, such as classification models, to analyze and learn patterns from the collected symptom data for accurate disease predictions.
- Identify and preprocess key features from the symptom data that contribute to effective disease prediction, enhancing the model's accuracy and efficiency.
- Design an intuitive and user-friendly interface allowing users to input their symptoms, triggering the machine learning model to provide predictions in a clear and understandable format.
- Implement mechanisms for continuous learning and improvement of the machine learning model using Incremental learning, incorporating feedback from real-world usage to enhance accuracy and expand the range of detectable diseases.
- Tools used: **Python, TensorFlow, Keras, Scikit-learn, Variational Autoencoders, Django, PostgreSQL, Git, Docker**

BIG DATA ANALYSIS WITH HADOOP TOOLS   January 2023 – April 2023

- Analysis of USA Tech Companies.
- Tools used: **Hadoop, Sqoop, Hive, and Pig.**

TEXT SUMMARIZER   January 2023 – March 2023

- A Text Summarizer using Glove.
- Tools used: **NLKT(Modelling), HTML, CSS, JavaScript, and Flask (web app).**

BUILDING A CRAWLING SPY (8-legged spider robot)   September 2022 – November 2022

- It can use image recognition to identify intruders across national borders and immobilize the target with the help of anesthesia darts. It is particularly useful in areas that are prohibited for human beings.
- Tools used: **Python, cv2 (Software), Acrylic Sheet, MOTORS, Arduino uno.**

BUILDING A MINI AIRCRAFT   August 2022 – August 2022

- Learnt to optimize fuel cost and flight duration by altering composition of fuel. Also appreciated the role of material and structure in aircraft construction.

ANALYSIS OF COMPONENTS INFLUENCING THE CURRENT CLIMATE CHANGE   January 2021 – February 2021
- Used Computational Data Analysis to understand effects and interrelationships of various parameters related to the following SDGs - Zero Hunger and Clean Water and Sanitation.
- Tools used: **Numpy, Matplotlib, Pandas, Seaborn.**

PUBLICATIONS AND PATENTS

- R. S. Prasad, D. Mishra, J. Swarnkar, O. Kumawat, M. Pandey, and A. Gupta, "Fatigue analysis of SAE8620: Synergistic effect of thermal treatments and surface roughness," *Advances in Materials and Processing Technologies*, vol. 9, no. 4, pp. 2042–2058, Dec. 2022, doi: 10.1080/2374068x.2022.2152594.
- J. SWARNAKAR, O. KUMAWAT, D. MISHRA, and R. S. PRASAD, "RIVER WATER CLEANER," Jul. 23, 2021
- P. Sharma, O. Kumawat, J. Sodhani, J. Swarnakar, and R. Sharma, "STATISTICAL ANALYSIS OF ONLINE LEARNING FOR EDUCATION DURING a PANDEMIC," *International Journal of Engineering Applied Sciences and Technology*, vol. 6, no. 12, pp. 63–71, Apr. 2022, doi: 10.33564/ijeast.2022.v06i12.010.
- **CRAWLING SPY (PATENT)** - This project aims to build a multi-legged robot that looks like a biological spider for the military's defense sector to spy on the opposition. Tools used: **RasberryPie, Sensors, OpenCV, and Python**. **Application No. 383780-001 (Applied).**

INTERNSHIPS

- **ML INTERN**- CybraneX, New Delhi (January 2023 – June 2023): Building Models for AI Tools, working with AI and Unity, and Designing Website.
- **RESEARCH INTERN** - (June 2022 – Aug 2022): Research Work for "Geometrical and Topological Methods of Machine Learning."

CERTIFICATIONS

| Fundamentals of Network Communication | Peer-to-Peer Protocols and Local Area Networks | Packet Switching Networks and Algorithms | TCP/IP and Advanced Topics |

Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning	International Conference on Sustainable Future Innovations in Education	Introduction to Software Engineering	Introduction to DevOps
Java for Android	Smart Contracts	Google Cloud Computing	Programming with Cloud IoT Platforms
MATLAB Onramp	Blockchain Basics	The Raspberry Pi Platform and Python Programming for the Raspberry Pi	