Ranjana Gautam

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Experience:

- **INDIAN OVERSEAS BANK (A PUBLIC SECTOR BANK)**
  - **Manager - Data Scientist**   **May 2022 - Present**
  - **Assistant Manager-Digital Banking**   **May 2013 - May 2022**
  - PROJECTS:-

    Credit Card Approval Predictive Model:
    1. Developed a highly accurate machine learning model for predicting credit card approval , achieving **91% accuracy**
    2. Identified key factors influencing creditworthiness, enabling banks to make more informed decisions.
    3. Streamlined the credit card application process, leading to **improved operational efficiency and reduced costs** .Mitigated financial risks by **identifying potential high-risk applicants.**

    Conversational Chatbot using a novel Bahdanau attention mechanism for Banking Product support :
    1. Designed a high-performing **sequence-to-sequence chatbot** that leverages powerful NLP techniques. This chatbot integrates a deep learning language model to understand user queries and generate contextually relevant responses.
    2. Incorporated **a novel Bahdanau attention mechanism** to strategically focus on critical elements within the input sequence during response generation.
    3. Implemented robust text data preprocessing techniques, including **cleaning, tokenization, and padding**, to prepare data for efficient model training.
    4. Achieved text summarization capabilities through a meticulously designed **GRU (Gated Recurrent Unit) encoder-decoder architecture.**

    Video KYC Project for helping in New Account Opening , Re-KYC, CKYC and Life Certificate:
    1. Developed a Video KYC system enabling remote customer onboarding with AI-driven facial recognition and document verification using **Python, TensorFlow, Keras, OpenCV, AWS, SQL, scikit-learn, Tesseract..**
    2. Built a data pipeline for video, document, and customer data processing.Developed **facial recognition and liveliness detection using CNNs and OpenCV.Integrated OCR** for automated document verification.Implemented **anomaly detection** for fraud prevention
    3. Reduced KYC processing **time by 50%.**Improved fraud detection **accuracy by 30%**. Increased customer **satisfaction by 90%.**Ensured **regulatory compliance (KYC, AML)** and secured data using encryption.

Skills & Tools:

- **Technical Skills :**   Python, Prompt Engineering, Machine Learning, Deep Learning, NLP, Computer vision,Time series, MySQL Database.
- **Tools:**   Numpy,Pandas, Scipy, matplotlib, seaborn, Scikit-learn, TensorFlow, Pytorch, Keras, OpenCV, Powerbi.
- **Cloud Computing:**   AWS, GCP Cloud Infrastructure and Docker, Kubernetes deployment tools.
- **Industry Knowledge:**   Expertise in Banking Domain, Simulation and Stochastic Modeling, Predictive Modeling, Classification, Regression, Clustering, Anomaly Detection, Recommendation Systems, Image and Video Processing,Optimization.

Education:

- **Data Science and ML Professional Certificate by CloudyML |Link** 🔗   **2021-2022**
- **Post Graduation in English Literature, Mahatma Gandhi Kashi Vidyapeeth, Varanasi.**   **July 2015**
- **'O' level in Computer programming, National Institute of Electronics and Information Technology (NIELIT).**   **Jan 2011**

Personal Projects:

- **Artistic Image Stylization with Generative Adversarial Networks (GANs):**| **Link** 🔗   **Mar 2024 - Apr 2024**
  - **Used GANs to create artistic image stylizations**, capturing the distinctive artistic patterns and textures of Claude Monet.Explored the capabilities of GANs for generating creative content, which could be beneficial for the company's marketing or design departments in creating unique & engaging visuals.
  - Constructed neural network architectures for both **image generation** (applying artistic style) **and discrimination** (differentiating real paintings).
  - Employed loss functions during training:**generator loss, cycle consistency loss, identity loss, and discriminator loss** to optimize the model's performance.
  - Trained the model to **achieve photo-to-painting style transfer while maintaining the original image content** through cycle consistency.

- **Innovative YouTube Video Summarization Tool with Hugging Face ASR:** | **Link** 🔗   **Jan 2024 - Mar 2**
  - Pioneered a novel **video summarization tool utilizing Hugging Face ASR technology**. This tool extracts key audio segments from YouTube videos and generates concise summaries, tackling challenges like diverse speech patterns and background noise.
  - Leveraged **Hugging Face's wav2vec2-large-xlsr-53-english model** for speech recognition, transcribing audio into text.
  - Implemented **audio chunking using librosa** to address potential out-of-memory errors during processing.
  - Utilized **transformers library's summarization pipeline** to condense lengthy transcripts into concise summaries.

- **Personalized Music Recommenda on System:** | **Link** 🔗   **Dec 2023 - Jan 2024**
  - Developed a high-performing music recommender system using **machine learning on a massive Spotify dataset**. This system analyzes user preferences, music genres, and listening habits to generate highly personalized recommendations, **resulting in an 89% boost in user engagement** .
  - **Implemented K-Means clustering** to effectively group songs and genres based on audio features.**Data visualization used with t-SNE and PCA**,
  - Integrated **cosine similarity** to deliver accurate song recommendations by calculating song similarity based on features, developed **a user-friendly interface using ipywidgets**, streamlining song input and recommendation display, enhancing user experience.

Internships:

- Data Scientist internship (CloudyML, Head office at West Bengal) overall 05 projects based on NLP, GAN, Computer vision and ASR.. | **Link** 🔗
- HackerRank 5 Star Badge in Python and 3 Star in Problem Solving.| **Link** 🔗
- Data Analysis Internship (KPMG, Mumbai)-Attained practical experience in Data Quality Assessment, Data Insights. | **Link** 🔗
- Web Scraping-Data Science Internship Project (British Airways, Mumbai)-Attained practical experience in Web scraping to gain company insights.|**Link** 🔗
- Data Visualization Internship : Empowering Business with Insights program (TATA, Mumbai).| **Link** 🔗
- Cybersecurity Internship (Mastercard, Mumbai)-Designed a phishing email simulation and Interpreting phishing simulation results|**Link** 🔗
- Data Science Internship Project (Standard Bank, Mumbai)-Skills and basics attained - SQL , Python, Preparing to Present, Putting It All Together. **Link** 🔗
- Artificial Intelligence Internship (Cognizant, Mumbai)-Completed practical tasks in Exploratory Data Analysis, Model Building and Interpretation. **Link** 🔗

License & Certifications:

1) Prompt Engineering certified by B10X.|**Link** 🔗   2) Deep Learning certified by CloudyML|**Link** 🔗   3) Data science bootcamp Course By OdinSchool|**Link** 🔗

4) AI tools mastery certificate by B10X |**Link** 🔗   5) Python certified by CloudyML |**Link** 🔗   6) Python certified by HackerRank |**Link** 🔗

7) Maths & Statistics certified by CloudyML|**Link** 🔗   8) SQL certified by CloudML .|**Link** 🔗   9) DSA for Data Science by CloudyML.|**Link** 🔗