Kirtan Kanani

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SUMMARY

With a dynamic **1.5+ years** in **data analytics**, I've driven valuable insights and developed **ML models**. **Proficient in problem-solving, machine learning, and AI, backed by a master's degree**. Eager to apply analytical skills and academic background to drive impactful projects.

EDUCATION

University of Waterloo   Sept 2022 - Dec 2023
*MEng in System Design Engineering **CGPA : 92/100***   *Waterloo, ON*

- **Relevant Courses** - Deep Learning, Introduction to Optimization, Advance Image Processing, Pattern Recognition, Graphical Deep Learning

EXPERIENCE

Technical Analyst   Jan 2023 – Present
Clinivex   *Toronto, ON*

- Streamlined product uploading processes by developing Python scripts and automating a previously manual task. This initiative resulted in substantial time savings and efficiency improvements.
- Applied Python for web scraping to systematically gather data from websites. Conducted in-depth analysis on the collected data to derive valuable business insights.

Analyst   April 2022 – June 2022
Tredence Analytics Solutions   *Bangalore, Karnataka*

- Proficiently crafted dynamic data dashboards using Power BI and Excel. Empowered hotel stakeholders to make informed decisions by intuitively exploring and visualizing complex datasets, fostering a data-driven decision-making culture.
- Collaborated closely with a data engineer to enhance code reusability and robustness. Developed a Talend pipeline for ETL processes and optimized the star database schema, ensuring efficiency in data processing and storage for advanced analytics.
- Conducted in-depth analysis on time series data using Jupyter Notebook and Python. Extracted valuable statistical and business insights, providing a comprehensive understanding of trends within the dataset. This analytical approach significantly contributed to informed decision-making processes.

Machine Learning Internship   Jan 2022 – April 2022
Feynn Lab   *Remote*

- Conducted in-depth cost analyses to evaluate the economic feasibility of implementing AI in the agriculture sector. Resulted in optimized operational efficiency, providing valuable insights for enhanced business performance in the farming domain.
- Led the creation and implementation of an advanced Deep Learning algorithm with a primary focus on disease estimation in plants through the analysis of leaf images. Achieved a remarkable performance improvement of 90.35% by meticulously fine-tuning the efficient network architecture.

Undergraduate Research Assistant   Dec 2019 – Nov 2020
Sardar Vallabhbhai National Institute of Technology   *Surat, Gujarat*

- Conducted an exhaustive 10-year analysis of minute-by-minute weather data from diverse locations in India. Employed machine learning clustering algorithms to explore correlations between datasets.
- Engineered an Arduino-based system for real-time data capture, achieving a significant 55% reduction in data collection latency. Designed and implemented an energy module using Xbee, Raspberry Pi, and a thermo-hygrometer. This innovative solution facilitated hourly GUI-based results, enhancing data visualization capabilities.
- Validated module outcomes by seamlessly integrating them with OpenStudio, a prominent Energy Simulation Software, across various climatic regions.
- Successfully showcased research at ICAME - 2022 (International Conference on Advances in Mechanical Engineering)

PROJECTS

Helmet Detection | *Python, YoloV5, Pytorch, Pandas, Numpy, Matplotlib, Wandb* Aug 2023 – Aug 2023
- Engineered a robust solution for helmet detection in 1080p video frames.
- Fine-tuned YOLOv5 model for precise object detection.
- Developed a custom neural network (CNN architecture) for classification, integrated with YOLOv5 as a region proposal network.

Auto Differentiation Package | *Python, Numpy* Oct 2023 – Oct 2023
- Engineered a specialized auto differentiation package tailored for numerical computing tasks. I built the package using NumPy, ensuring compatibility with existing numerical computing workflows.
- Designed and implemented API endpoints that closely mirror those of PyTorch, facilitating a seamless transition for users familiar with the popular deep learning library.

Detect AI-written text | *Python, HuggingFace, Pandas, Wandb* Dec 2023 – Dec 2023
- Trained a custom transformer model alongside a custom tokenizer designed specifically for detecting human-written text patterns.
- Conducted a comprehensive comparison between the custom transformer model and a fine-tuned BERT model, utilizing a pretrained tokenizer for BERT model.
- Achieved an impressive overall accuracy of 98.75% with the custom model, showcasing its superior performance. The fine-tuned BERT model, while robust, attained a commendable accuracy of 97.21%.

VOLUNTEER EXPERIENCE

Wat.ai - GPU Optimization Sep 2023 – Present
- Contributed to the enhancement of GPU performance through the application of Reinforcement Learning techniques.Specifically focused on the development and refinement of the Kernel Tuner library.
- Spearheaded the creation of CUDA code for critical operations, including normalization and addition. Leveraged CUDA to implement and benchmark these operations, ensuring efficiency and reliability in GPU processing.

Avolta Oct 2023 – Present
- Played a key role in assessing firmware requirements, specifically focusing on the selection of machine learning models suitable for implementation on Raspberry Pi.
- Explored various machine learning models, analyzing their compatibility and performance in the context of embedded systems.

PUBLICATION

- **Image Segmentation of Neuronal Cell with Ensemble Unet Architecture**
  International Conference on Emerging Trends in Mathematical Science and Computing - 22
  Kirtan Kanani, Aditya K. Gupta, Ankit Kumar Nikum, Prashant Gupta, Dharmik Raval
- **Exploration of climate zones based on hierarchal clustering algorithm for buildings in India**
  Kirtan Kanani, Aditya Kumar Gupta, Sanjay kumar Patel, Mukund Bade

ACHIEVEMENTS

- Secured the **1st rank** in the Apecoin category at **ETHGlobal Waterloo Hackathon**, demonstrating exceptional skills and innovative solutions.
- Received the prestigious Best Presentation award in the machine learning track at the IEMSC Conference.
- Completed Udemy course Ultimate AWS Certified Cloud Practitioner CLF-C01 & CLF-C02
- Completed Deep learning specialization on Coursera

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL (Postgres,MySQL), JavaScript, HTML/CSS, TypeScript
Frameworks: React, Node.js, Flask, Material-UI
Developer Tools: Git, Docker, VS Code, Visual Studio, PyCharm, IntelliJ
Libraries: Pandas, NumPy, Matplotlib, PyTorch, TensorFlow, Keras, Sklearn, Express