

Aishwarya Dekhane

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Resume Summary - Highly skilled **data analytics and machine learning** professional with over 6+ years of industry experience in developing and optimizing deep learning models, computer vision applications. Proficient in **Python, Tableau, PowerBI, KNIME** and various AI frameworks, driving significant improvements in project efficiency and performance.

Education

University of Michigan

Dearborn, MI, USA

Masters in Artificial Intelligence, Specialization: Data Analytics, GPA: (4/4)

Aug 2023 - Apr 2025

Courses: Advance Algorithms, NLP, Deep Learning, Statistics, Time Series Analysis Pattern Recognition, Machine Learning

Savitribai Phule Pune University

Pune, India

Bachelor of Engineering in Computer, GPA: (3.8/4)

Jul 2015 - Aug 2019

Courses: Data Structures, Data Science, Machine Learning, Software Engineering, Database Management, Object Oriented Programming

Work Experience

University of Michigan - Dearborn, MI - Research Assistant

Jan 2024 - Present

- Implemented and optimized **deep learning** architectures for text-to-speech (TTS) models, **data analysis**, working in audio generation by using ElevenLabs, and used diffusion, **CNN, ML models** and Python scripting to streamline spectrogram analysis.
- Researched and developed novel anti-spoofing techniques to combat deceptive content, **data cleaning, transforming data** to voice data against emerging **deepfake threats**. Prosody **features extraction** and **Python scripting**, using algorithms, ensuring robust anti-spoofing measures for **performance tracking**.

Cogent IBS - Detroit, MI - AI/ML Intern

Dec 2023 - Mar 2024

- Developed an **AI chatbot - LLMs** using GCP APIs, achieving a 20% reduction in customer support response time.
- Build out data reporting infrastructure, from the group up using **Tableau, PowerBI**, providing real time insights into the product, resulting in a 30% improvement in performance for the client project.
- Using **python, SQL** implemented **machine learning algorithms** to enhance the chatbot's natural language understanding, leading to an increase in user satisfaction ratings.

Infosys Ltd - Pune, IN - Technology Analyst

Dec 2019 - Aug 2023

- Developed over 10 innovative proofs-of-concept and prototypes in **visual data analytics, data processing, feature extraction**, nested database and **python, azure** capabilities by a significant margin.
- Automated critical processes for a **US bank, complex financial calculations for mortgage applications**, ML technique to solve problems, resulting in significant time saving the bank 15 hours weekly and improving accuracy by 25%.
- Managed and optimized software development projects using tools like **Git, Jira** and **Confluence** at Infosys Ltd, leading to a substantial 40% increase in project delivery efficiency and enhanced team collaboration with the marketing team.
- Experienced with Exploratory Data Analysis(EDA), developed and optimized python scripts to **automate financial data extraction**, integrating APIs for monthly insurance calculation, and generated accurate financial reports.

Oasis Software Solutions - Pune, IN - Data Engineer Intern

Jun 2019 - Nov 2019

- Analyzed and processed over 1,000 data sets to improve **machine learning**, model accuracy by 15%.
- Collaborated with a team of 10 engineers to **integrate AI** into existing products, increasing user engagement by 30%.

Skills

- Programming Language**- Python, C, C++, Java, JavaScript, TypeScript, PHP
- Data Science Skills**- Data Preprocessing, Data Visualization, Data Analysis, Feature extraction, Classification
- AI and Machine Learning**- Deep Learning, Computer Vision, NLP, Keras, PyTorch, OpenCV, Yolo, Sklearn, Matplotlib, Numpy, Pandas, Azure AI, MATLAB, Tensorflow, MLFlow, AirFlow, scikit-learn LLM, Text Analysis, OCR, GCP, Dialogflow
- Cloud Technologies- Google Cloud Services, Microsoft Azure, Amazon Web Services
- Tools**- Visual Studio, PyCharm, Jupyter Notebook, GitHub, Jira, Confluence, Tableau, PowerBI, MS Office

Projects

Automated Knowledge Graph KG Builder with Chat Interface - Beautiful Soup, SpaCy, ReactJS, KG, Flask, Pandas

- Developed an Automated Knowledge Graph (KG) Builder utilizing BeautifulSoup and SpaCy, processing over many web pages for entity extraction and relationship mapping.
- Implemented a chat interface using ReactJS and Flask, enabling real-time user interactions with the knowledge graph, resulting in a 40% reduction in query response time.

- Processed data efficiently using Pandas, facilitating the seamless integration of over 50,000 data entries into the knowledge graph, enhancing the system's data handling capability.

Road Sight Navigator- Lane Line Detection: OpenCV, Canny Edge Detector, Computer vision, PyTorch, Python

- Harnessing advanced computer vision algorithms, this road lane line detector meticulously delineates vehicular pathways, augmenting navigational precision for autonomous driving systems.
- Implemented a sophisticated Road Sight Navigator using OpenCV, achieving over 90% accuracy in lane line detection across various lighting and weather conditions in a dataset of 1000+ hours of driving footage.

Thesis

Advanced Deepfake Detection using Spectrogram Analysis in Speech Synthesis

- Utilized advanced signal processing techniques to extract features from spectrograms, enabling the detection of deepfake audio. Employed text-to-speech (TTS) and speech synthesis technology tools to analyze synthesized speech patterns, focusing on anomalies that indicate manipulation.
- Designed and implemented LSTM models, including feed forward neural network, convolutional neural networks (CNNs), RAG to classify and differentiate between authentic and synthetic audio samples. Proficient in Python and for developing and fine-tuning these models, data extraction and analysis ensuring high accuracy and efficiency.
- Developed automated testing frameworks to validate the performance of the deepfake detection system, utilizing principles of quality assurance automation. Experience with Optical Character Recognition (OCR) tools such as Tesseract, to cross-reference text and audio consistency, enhancing the system's ability to detect inconsistencies in multimedia content.

Research Paper

Improved Deep Learning Framework for Segmenting and Classifying Skin Lesions using K-nearest neighbor algorithm and Multi-Instance Learning: Research Paper Publication - 4th IEEE International Conference on Advances in Computing, Communication

Control and Networking (ICAC3N-22)

- Boosted Skin Lesion Analysis Accuracy: Achieved 95.2% segmentation accuracy and 92.7% classification accuracy for skin lesions, surpassing existing KNN and MIL-based methods by 5.8% and 3.1%, respectively.

Centralized Multipurpose Transportation System- Research Paper Publication - Published in International Research Journal of Engineering and Technology (IRJET) Volume 6, Issue 5, May 2019 S.NO:277

- Enhanced Resource Utilization: Achieved 20% higher vehicle and infrastructure utilization through dynamic route optimization and demand prediction, reducing idle time and resource waste.
- Improved Passenger Experience: Provided real-time information and personalized travel recommendations, resulting in a 38% increase in passenger satisfaction compared to traditional public transportation systems.

Certifications

Microsoft Azure AI | AI900 : Certification Number : I274-1040

- Computer Vision, Natural Language Processing, Machine Learning, Automated Machine Learning, Azure Services, Principles of Artificial Intelligence, Knowledge Mining, Decision Support, Visual Tools for Machine Learning

TensorFlow Keras | OpenCV University : Certification Number : 6586ba78d7fb42ff88ff9d946f45c2cf

- TensorFlow, Keras, Deep Learning, Computer Vision, OpenCV, Neural Networks, Machine Learning, Image Processing, Real-Time Applications, Python Programming, AI Models, Convolutional Neural Networks (CNNs), Object Detection, Image Classification, Hands-On Projects, Data Augmentation, Transfer Learning.

PCEP Certified Python Programmer | Python Institute : Certification Number : Aup7.CPpy.4nnX

- Compilation, Interpretation, Keywords, Instructions, Indentation, Literals, Variables, Numeral Systems, Operators, Data Types, I/O Operations, Control Flow Mechanisms - Conditional Blocks and Loops

Open Source Contributions

- **OpenVINO ToolKit-** Improving the type safety and maintainability of NNCF's common sparsity code using mypy checks.
- **Generative AI-** Text generation pipeline using popular LLMs and OpenVINO GenAI in task regards enabling tests for red-pajama-3b-instruct, a deep learning model.
- **TF FE-** TensorFlow models is called as TensorFlow Frontend (TF FE), which converts a model represented in TensorFlow opset to a model opset using machine learning.

Awards and Achievements

- Awarded a prestigious **\$10,000 annual scholarship from University**, recognizing academic excellence, leadership potential, and commitment to community service.
- Acknowledged as the **Top-Contributing Employee Award at Infosys (May 2021)**, demonstrating exceptional skills.
- Currently serving as the **President of the Graduate International Student Organization (GISO)** at University of Michigan, demonstrating strong leadership, organizational, and communication skills.