Pradhyumna

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OBJECTIVE

As a highly motivated and passionate graduate with a master's degree in **Artificial Intelligence**, with **1 year** professional experience as **Python Developer** with **2 year** experience in **Responsible AI Lab** at UNT and **4 months** in **Oak Ridge National Lab** as **Research Assistant**. With strong background and hands-on experience in **AI research** and **AI-driven product development**.

EDUCATION

University of North Texas — Denton,TX
Master of Science in Artificial Intelligence — September 2022 – May 2024

Jawaharlal Nehru Technological University — Hyderabad, India
Bachelor of Technology in Electronics and Communication Engineering — August 2017 – June 2021

SKILLS

Programming Languages	Python, Java, R, SQL, JavaScript, TypeScript, MATLAB, HTML, CSS, Kotlin, Go, C++, C.
AI Tools/Frameworks	Pandas, Scikit-learn, PyTorch, TensorFlow, NumPy.
DevOps	Git, Jenkins, Docker, Kubernetes
Web Frameworks	Django, Flask, React Native, React JS, Angular, Fast API.
Technologies	Artificial Intelligence, Machine Learning, Deep Learning, Big Data, Software Engineer

EXPERIENCE

Responsible AI Lab (University of North Texas) — Denton, Texas
Research Assistant — September 2022 – Present

- Developed and deployed cutting-edge **deep learning** algorithms for Large Language Models (**LLM**), Natural Language Processing (**NLP**), **Computer Vision**, and Speech, including building and scaling **MLaaS** platforms.
- Collaborated effectively on **6 projects**, accounting for **80%** of the workload. Partnered with Oakridge National Lab on 2 additional projects, resulting in a **60%** reduction in overall workload for the team.
- Implemented robust **MLOps** practices using **MLflow** and **Kubeflow**, and developed advanced deep learning algorithms with **PyTorch** and **TensorFlow** for Large Language Models (**LLM**), Natural Language Processing (**NLP**), Computer Vision, and Speech, contributing to scalable **MLaaS** platforms.
- Leveraged **AWS SageMaker** for end-to-end model development, **Apache Spark** for large-scale data processing, and containerized applications with **Docker**, orchestrated using **Kubernetes**, ensuring efficient deployment and management of **machine learning** solutions.

University of North Texas — Denton, Texas
Teaching Assistant (Intro to Big Data and Data Science) — January 2023 – Present

- Developed data analysis curriculum focusing on **Python**, **R**, **SQL**, **ETL**, and **Data Science**. Instructed **300+** students on practical applications for **Big Data** analysis and processing.
- Collaborated with instructors to incorporate AI and **Big Data** technologies into the curriculum. This included connecting supercomputer concepts with **databases**, **datasets**, and **data visualization** tools for advanced analytics.
- Key Technologies: Big Data, Data Science, Python, R, SQL, Data Analysis, AI Tools, Data Warehousing, Tableau, Power BI, Matplotlib, Hadoop, Spark, Docker, Kubernetes, ETL (Extract, Transform, and Load).

We Hub — Hyderabad, India
Python Developer — April 2021 – June 2022

- Developed AI-powered solutions using **Python** and **R** to improve safety for women and visually impaired individuals through smart gadgets.
- Collaborated to design and optimize cloud-based applications on **Azure** and **AWS**, ensuring peak performance and responsiveness with **Docker** for streamlined deployments with increasing **30%** work efficiency.
- Developed AI-powered solutions using **Python** and **R**, focusing on enhancing safety for women and visually impaired individuals through smart gadgets, and optimized cloud-based applications on Azure and AWS for peak performance.
- Utilized **Docker** for streamlined deployments, implemented **CI/CD pipelines**, and applied systems engineering principles, while developing robust applications using **Django, Flask, REST API, ReactJs,** and **React Native**, leading to a **30%** increase in work efficiency.

PROJECTS

Prompt-based Image Generation using Stable Diffusion Model February 2024
PyTorch | NumPy | Stable Diffusion | GitHub | Computer Vision
Developed a prompt-based image generation system, achieving a **2%** quality improvement over the base model. Empowered model with creative control by generating high-quality images based on their descriptions.

Machine Translation with Transformer (Open-Source Project) February 2024
Transformer | PyTorch | AWS | Flask | Django | Natural language Processing (NLP) | S3 Bucket
Developed and deployed a Machine Learning as a Service (**MLaaS**) translation system using Transformer architecture. Designed and Developed a Model from scratch with a **0.5 BELU** score with improvement in Indian regional languages.

Waisum.co January 2024
Next JS | Tailwind CSS | AWS Amplify | EC2 | AWS Lambda
Founded and launched Waisum.co, a website hosting MLaaS models with the intent of API services **100%** self-developed. Published educational blogs on state-of-the-art models to share knowledge with the community.

Fine-tuning of the Pangu Weather Model December 2023
Hadoop | PyTorch | PySpark
Collaborated with **Oakridge National Lab** researchers and the **Responsible AI Lab** to improve the Pangu Weather Model. Part of the development of a fine-tuned Pangu Weather model for precise cyclone prediction.

Text-Prompt Based Image Segmentation August 2023
Python | TensorFlow | Deep Learning | Machine Learning
Constructed a deep learning model that precisely segments designated regions of interest using text prompts. Spearheaded a unique approach to a research paper at major conferences, showcasing a **0.62 IOU** score for segments.

RESEARCH EXPERIENCE

Text Prompt-Based Image Segmentation with Attention on Medical Imaging
- The first author for the research paper will be published at an AI conference in 2025.

The Impact of ChatGPT on Streaming Media: A Crowdsourced and Data-Driven Analysis Using Twitter and Reddit
- Co-author for research paper published at IDS conference.
- Paper was accepted and presented.

A Creative and Cross-Language Method for Inferring Ethnicity Through Skin-toned Emoji Mining
- Co-author for research paper currently under review for publication at the WWW conference.

AWARDS | PRESENTATIONS | GRANTS

Awards:
- Received the Outstanding Master's in Science Student Award in Artificial Intelligence.

Presentations:
- Presented on "The Impact of ChatGPT on Streaming Media: A Crowdsourced and Data-Driven Analysis using Twitter and Reddit" at the IDS remote conference in 2023.
- Delivered a presentation on Responsible AI at an AI seminar hosted by the University of North Texas.

Grants:
- Earned the Academic Excellence Grant, securing a 40% scholarship per semester.
- Received the Department of AI Travel Grant from the University of North Texas to attend the WWW2023 Conference in Austin, Texas.