DEEPAK YADAV

+91-9836375132 | deepakec1031@gmail.com | https://deepak7376.github.io/ | github.com/deepak7376 | linkedin.com/in/dky7376

Experienced professional with over 5 years of expertise in developing advanced vision-based models and automated tools, seeking full-time opportunities to contribute and advance in Software Engineering and Machine Learning.

Experience

Sony | *AI & ML Consultant* | Bengaluru, India — *June 2021 - Present*

- Led the development of a Python-based framework for verifying TensorFlow, PyTorch, and ONNX model layers on IMX500 devices, reducing the verification process from two months to ten days.
- Assisted other teams in developing advanced vision-based models compatible with IMX500, specializing in classification and object detection using TensorFlow and PyTorch.
- Created an end-to-end testing framework for model training and accuracy verification on IMX500 devices, enabling Sony to quickly train and benchmark models on the IMX500 device using Python and custom benchmarking scripts.
- Led the development of an industrial-level Proof of Concept (PoC) for implementing Smart Factory applications, including line abnormality detection, worker monitoring, and safety zone monitoring, utilizing computer vision techniques and IMX500 technology.

Activa Incorporation | *Associate Data Scientist* | Hyderabad, India — *Dec 2019 - April 2021*

- Successfully developed an AutoML platform using Python and TensorFlow, democratizing AI by simplifying machine learning model training.
- Drastically reduced the time and effort required for model development through automated hyperparameter selection with Scikit-learn, enhancing efficiency.
- Facilitated real-world application deployment by providing downloadable models and cloud inference endpoints using Flask and AWS.

Activa Incorporation | *Intern Data Scientist* | Hyderabad, India — *Aug 2019 - Dec 2019*

- Developed a Mask-RCNN based computer vision model for precise internal crack detection in aircraft engines.
- Successfully pitched the Proof of Concept at T-Hub Hyderabad by our team, showcasing its potential to automate and enhance efficiency in aircraft maintenance processes.

IIEST Shibpur | *Postgraduate Researcher* | Kolkata, India — *Jul 2018 - June 2019*

- Conducted an in-depth exploration of fault-detection methodologies in WSNs, delving into statistical-based and machine-learning-based approaches.
- Engineered a sophisticated algorithm dedicated to detecting faulty nodes within Wireless Sensor Networks (WSNs), contributing to the advancement of fault-tolerant systems.

Education

7.0/10.0 **M.Tech in Information & Technology**, *IIEST Shibpur* | West Bengal, India — *2017-19*

6.8/10 **BTech in Electronics & Communication Engineering**, *UCER Allahabad* | U.P , India — *2010-14*

Courses: Machine Learning | Algorithms| Information and Coding Theory | Advanced Database Management System | Signal and Systems | Microprocessors | VLSI Design and Embedded System.

Skills

Programming Languages: Python (Expert), C/C++ (Proficient), Java, JavaScript

ML Frameworks: PyTorch, TensorFlow, Keras, Pandas, Scikit-learn, OpenCV, NumPy, Matplotlib, Seaborn

Tools & Technologies: MLFlow, Airflow, Docker, Kubernetes, Flask, Django, FastAPI, TFX, AWS (SageMaker), Jenkins, Nginx, Git, Bitbucket, SQL, MongoDB

Other Skills: Data Structures & Algorithms, SOLID Principles, Object-oriented Design, Design Patterns, Low-Level Design

Soft Skills Time Management, Problem-solving, Documentation, Engaging Presentation, Leadership, On-site coordination.

Personal Projects

DocChatAI | LLM Based Custom PDF Chatbot | GitHub Link — *Nov 2023 - Jan 2024*

Personal Project

- Implemented Custom Chatbot leveraging advanced techniques including Retrieval Augmentation Generation (RAG), Langchain, and Large Language Models (LLMs).
- Enabled the chatbot to respond to user queries within uploaded PDF files, showcasing the document understanding capabilities.
- Successfully deployed the application on Hugging Face Spaces using Streamlit, providing an interactive and user-friendly interface.

Prompt2Animate | Create animation using stable diffusion model | GitHub Link — *Oct 2023 - Nov 2023*

Personal Project

- Developed an open-source PyTorch library for Stable Diffusion Models, enhancing accessibility to state-of-the-art techniques.
- User can use text to generate the short animation and videos.

Fault Detection in Wireless Sensor Networks (WSNs) | GitHub Link — *Jun 2018 - Apr 2019*

MTech Thesis Project

- Developed a Distributed Self-Fault Diagnosis (DSFD) method for effective fault detection in Wireless Sensor Networks (WSNs).
- Conducted rigorous testing and validation of the algorithm on the Arduino platform, seamlessly integrating with Xbee devices
- Contributed valuable insights to the field of WSNs, advancing fault detection methodologies for enhanced reliability and performance.