Adithya Varambally

AI & Data Engineer

CONTACT

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adithya (linkedIN)

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SKILLS

Programming Languages

- Python (Proficient)
- SQL
- C++
- JavaScript
- Java
- Golang
- R
- PySpark

Frameworks

- OpenAI gym
- OpenCV
- Optical Flow
- YOLO-Darknet
- NLTK
- Tensorflow
- PyTorch
- Stable-Baselines

Pipelines & Systems

- Snowflake
- Apache Spark
- Apache Airflow
- Apache Kafka
- Apache Airflow
- DBT
- Vector Databases
- Carla - Unreal Engine
- Godot

Cloud and Infrastructure

- AWS
- Azure
- GCP
- Docker
- Git
- Jenkins
- Jira

SUMMARY

Machine Learning Engineer with expertise in building and deploying recommendation systems, personalization algorithms, and large-scale ML pipelines. Skilled in PyTorch, TensorFlow, Spark, and BigQuery, with experience in A/B testing, NLP, and scalable cloud-based deployments (AWS/GCP). Committed to attention to detail, data integrity, and delivering high-impact, user-focused AI solutions.

SELECTED PROJECTS

Topic : Reinforcement learning for Safer Public Transport: A comparative Study of PPO and DQN in Simulated Bus Driving 2025

- Achieved 70% lane-change success at 23 m/s using RL-based control policies.
- Benchmarked PPO and DQN in high-fidelity driving simulations with OpenAI Gym.
- Designed and implemented large-scale ML models with PyTorch, including reinforcement learning and ranking algorithms, for simulation-based personalization — directly transferable to recommendation systems.

Tools: Python, SUMO, Carla Simulator, Unreal Engine, Godot, OpenAI Gym, Stable-Baselines, TensorFlow, OpenCV

Topic : TinyLLama + LoRA Fine-Tuning for Low-Resource AI Deployment 2024

- Fine-tuned TinyLLaMA on The 48 Laws of Power using LoRA for low-VRAM inference
- Implemented evaluation loops to monitor trade-offs between performance and latency
- Integrated safe prompt handling mechanisms for compliance-focused use cases

Tools - Python, Hugging Face Transformers, PEFT, LoRA, PyTorch, Google Colab, Accelerate, CUDA

Topic : ESG & Risk Indicators Analysis | Python, Snowflake, Power BI

- Developed a data ingestion and analytics pipeline using Snowflake Snowpark and World Bank API, integrating ESG, GDP, and population data
- Designed secure schema views and fact tables for scalable querying and Power BI exports
- Built automation scripts for upload, transformation, and statistical correlation (GDP ↔ ESG)
- Enabled reproducible Power BI dashboards using CSV-based export workflow

Tools - Python, SQL, Snowflake, DBT, Power BI, World Bank API

WORK EXPERIENCE

NATURESCAN LLP, Bengaluru, India

WEB DEVELOPER 07/2022 - 03/2023

- Drove a 12% uplift in revenue and user reach above forecast by delivering responsive, high-performance websites using HTML, CSS, and JavaScript
- Drove a 6–20% increase in digital asset value by partnering with cross-functional teams to launch user-centric features that improved experience and accelerated website traffic growth
- Conducted thorough testing and debugging of web applications to ensure seamless functionality across different browsers and devices
- Implemented SEO best practices and optimized websites for search engine rankings, resulting in higher visibility and increased organic traffic

Tools - Python, Javascript, HTML, Canva

OS

- Linux (Ubuntu)
- Windows

ML Techniques

- LoRA
- Fine-Tuning
- RLHF
- Reinforcement Learning
- Optical Flow

LANGUAGES

- English (Fluent)
- German (Basic)
- Hindi (Basic)
- Kannada (Native)

HOBBIES

- Digital gaming
- Trekking
- Football
- Badminton
- Chess

PACECOM TECHNOLOGIES PVT LTD, Bengaluru, India

06/2021-04/2022

TRAINEE-ENGINEER

- Improved model accuracy by 15% and reduced false positives by 10% through confusion matrix analysis and metric optimization
- Ensured data integrity and model reliability by generating cross-validation reports for over 10,000 annotations
- Enhanced vehicle safety by annotating and modeling data for ADAS, iris detection, and autonomous driving systems
- Delivered tailored AI and data solutions for VEONEER India Pvt. Ltd and APTIV Automotive, including:
- Increased accuracy in AEB validation through Excel-based visual analytics and SharePoint reporting
- Strengthened driver alertness detection via iris-pattern tracking and model training
- Accelerated data workflows by building annotated JSON files and dynamic dashboards
- Developed client-specific prototypes with clear technical documentation for seamless implementation

Tools: Python, OpenCV, Jira, MS Office

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, Allahabad, India

INTERN 07-2019 - 08-2019

- Designed and developed an Image Processing Unit utilizing Optical Flow in Python
- Optimized the unit for extracting real-time information from CCTV footage with minimal processing power
- Improved interpretation and comprehension of live video streams, particularly suitable for resource-limited settings

Tools - Visual Studio Code, Eclipse, Opencv-python, Yolo-Darknet

PUBLICATIONS

2020

CRITICAL ANALYSIS OF MACHINE LEARNING VS DEEP LEARNING ALGORITHMS FOR SMALL AND LARGE DATASETS

Adithya Varambally, Akshaya S, Mukesh Madavi, Mohammed Mughees, Dheeraj D

Aims at critical analysis for enhancement of performance of supervised and unsupervised algorithms.

EDUCATION

2024-present

MASTER OF SCIENCE DATA SCIENCE, AI AND DIGITAL BUSINESS

GISMA University of Applied Sciences, Potsdam, Germany

Thesis: Reinforcement Learning for Simulated Bus Navigation using OpenAI Gym and Carla.

2015-2020

BACHELOR OF ENGINEERING INFORMATION ENGINEERING

Global Academy of Technology, Bengaluru, India