Alwin Paul

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OBJECTIVE

AI Master's student with robust AI knowledge, practical programming skills, and a record of thriving in collaborative environments. Enthusiastic about machine learning, data analysis, and strengthening system security, seeking a Master's thesis in **Generative AI** that leverages expertise in Python, ML, and data analysis.

PROFESSIONAL EXPERIENCE

07/2024 – present
Cottbus, Germany

Working Student - Systems Engineer
Perinet GmbH ⧉

- Explored GPT model deployment on resource-constrained **ARMv7 Cortex-A8/A9** devices; evaluated frameworks like **llama.cpp**, **TinyLlama**, and **WebAssembly (WASM)** for on-device inference.
- Analyzed architectural constraints and software incompatibilities of **32-bit ARM architectures**.
- Developed an intent-based chatbot using **Natural Language Processing (NLP)** techniques as an alternative solution under hardware limitations.
- Created a **Retrieval-Augmented Generation (RAG)** system using **Python**, **Ollama**, and **Llama model**.
- Integrated company product documentation into the RAG system, establishing a knowledge base for efficient information retrieval and enabling query-based access to product information.

05/2022 – 07/2022

Cybersecurity Engineer Internship
Virtually Testing Foundation ⧉

- Implemented **red/blue team** tactics and operationalized the **MITRE ATT&CK** framework to fortify threat detection and prevention strategies.
- Utilized **Splunk** for in-depth big data analysis, identifying and mitigating security threats efficiently.
- Engaged in comprehensive training sessions covering **OWASP Top 10 vulnerabilities**, Android hacking, and Linux backdoors, mastering techniques for thorough security assessments.
- Developed a foundational understanding of **OSINT**, enabling proactive detection and response to security threats.

EDUCATION

10/2022 – present
Cottbus, Germany

Master of Science in Artificial Intelligence
Brandenburgische Technische Universität Cottbus-Senftenberg ⧉
Key subjects: Data Mining, Deep Learning, Data Warehouse, Information Retrieval, Explainable Machine Learning, Image Processing and Computer Vision.

2018 – 2021
Kottayam, India

Bachelor of Computer Applications
Mahatma Gandhi University, Kottayam ⧉
Key subjects: Data Structures, Database Management Systems, Design and Analysis of Algorithm, Software Engineering, Computer Networks

PROJECTS

AI/ML Football Analysis System ⬀

- Implemented **YOLO**-based object detection and **ByteTrack** for robust tracking, demonstrating ability to apply AI techniques to complex real-world scenarios.
- Utilized **K-Means** clustering and **Optical Flow** techniques, showcasing proficiency in applying various AI algorithms to solve multifaceted problems.
- Developed performance metric modules, indicating capability to derive and implement methods for optimization in dynamic environments.

CERTIFICATES

IBM Cybersecurity Analyst Professional Certificate

- Cybersecurity Roles, Processes & Operating System Security ⬀
- Cybersecurity Compliance Framework & System Administration ⬀
- Introduction to Cybersecurity Tools & Cyber Attacks ⬀
- Penetration Testing, Incident Response and Forensics ⬀
- Cybersecurity Capstone: Breach Response Case Studies ⬀
- Network Security & Database Vulnerabilities ⬀

ACHIEVEMENTS

03/2020 – present	**TryHackMe** ⬀

- Completed 112 rooms and earned 15 badges on TryHackMe, showcasing my dedication to cybersecurity skill development.
- Ranked among the top 1% of users on the platform, reflecting my proactive approach to mastering enumeration and exploitation techniques.

08/2020 – 11/2020	**Google Cloud Program** ⬀

- Demonstrated understanding of high-scale applications such as Google Search, Gmail, and YouTube as a result of the program.
- Developed a comprehensive grasp of core concepts, including computing, application development, big data, and machine learning in a cloud environment.

SKILLS

Programming
Python, TensorFlow, PyTorch, Pandas, Numpy, OpenCV, Matsplotlib, Scikit-learn, TensorFlow, Seaborn, Dash, Plotly, Matplotlib

AI/ML
Generative AI, GANs, Multidisciplinary Design Optimization

Operating System
MacOS, Windows, Linux

Knowledge
Machine Learning, Data Science, Agile Project Development, Computer Networking.

Database
MySQL, PostgreSQL

Documentation tools
Microsoft Office Suite, Markdown Language, Word, Excel, PowerPoint

Software skills
Git, Postman, Kubernetes

Research Interests
Adversarial Machine Learning, Explainable AI for Computer Vision Models, Robust Deep Learning Architectures,Analysis of neural network latent spaces

LANGUAGES

- English (C1)
- German (A2)