Aakarshit Srivastava

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Skills

Languages: Python, C/C++, Java, C#, SQL

Technologies & Tools: Machine Learning,Data Science,NLP,Ethical Hacking & CyberSecurity, Cloud Computing(AWS Services & Google Cloud Platform),CloudSim, WireShark,Wordpress,Linux/Kali/Metasploit,Selenium, Git/Github, Docker & Kubernetes, GenAI and Deep Learning, Prompt Engineering, Transformers and Neural Networking

Operating Systems: Unix/Linux, Windows, macOS

Distributed Systems: Distributed computing, cloud-based architectures

Networking: Information retrieval, TCP/IP

Work Experience

Pranveer Singh Institute of Technology Feb 2024 - Present

Research And Development Specialist

- Studied and developed novel algorithms for optimizing energy consumption in high-load industrial environments.
- Developed a hybrid approach to reduce Makespan of cloudlets by VM scheduling, Achieved 25-30% performance increase, 5% Energy savings and 8% SLA improvement.
- Published research findings in peer-reviewed journals on energy-efficient algorithms.Collaborated with industry partners to implement algorithms for practical applications in energy optimization and VM Migration.Optimized energy consumption in industrial settings, leading to a 20% reduction in costs.
- Utilized CloudSim 3.0.3 simulator, Java, Reinforcement Learning, Q learning, SARSA, Meta Heuristic Algorithms.

Indian Institute of Technology Bombay, Remote Jan 2024 - Apr 2024

Machine Learning Intern

- Worked on OpenAI Whisper and Vistaar ASR models for speech-to-text applications.With Nvidia Tacotron 2 LLM model for voice synthesis.
- Developed Architecture for Efficient and Accurate Hindi Audio recognition with 30% improvement in WER (Word Error Rate) and more accurate Spectrogram analysis.
- Utilized Google Colab, Python 3.12.0, OpenAI, Machine Learning, Deep Learning, Large Language Model.

British Airways, Remote Nov 2023 - Jan 2024

Data Science Intern

- Conducted web scraping and data analysis of customer reviews, uncovering key insights that informed business strategies and consumer purchasing decisions.
- Developed a predictive model to analyze consumer sentiment and purchasing behavior, enhancing marketing strategies.
- Utilized Python,Data Manipulation, Data Science, Data Visualisation, Machine Learning, PowerPoint, Web Scraping.

Education

PSIT Kanpur Nov 2021 - Jun 2025

B.Tech in Computer Science and Engineering with Specialization in Artificial Intelligence (AI). ***CGPA: 8.4/10***

Relevant Coursework: Microprocessor , Object Oriented Programming , DBMS , Discrete Maths , Data Structures and Algorithms , Operating Systems, Computer Networks , Machine Learning , Artificial Intelligence , Design and Analysis of Algorithms,Compiler Design

Project Work

- **Data Analyzer v4.1 (2022):** Developed a software with similar capabilities of LLM in its early stage, is a versatile, multi-model application integrating trained models for diverse data types such as images and medical information. It predicts outcomes and visualizes results using various libraries, presenting insights on a web interface.
- **ArkBot (2023):** A bot that utilizes a Microsoft-trained model for voice-to-voice user interactions, capable of responding to inquiries such as time updates and weather reports. It can also recognize songs and employs deep learning for small-scale computations, enhancing its functionality and user experience.
- **DataFlowX (2024):** DataFlow X is a cloud service leveraging AWS architecture, designed for cost-effective deployment of data pipelines. It handles data input, analysis, and outputs, supporting multiple datasets, primarily focusing on network intrusion detection. It generates real-time responses and alerts, enhancing cybersecurity measures efficiently.

Awards and Achievements

- Top 10 Finalist in Flipkart Grid 6.0, Project: Crystal Quantum Shield - API Security.
- WoodPecker's Hackathon Finalist, Project: Disaster Prediction and Real-time Response system.
- Student Head of Research Department.
- 50,000 Global rank on LeetCode, 600+ Problems Solved, 8 Badges.
- **Publications:**
  - ”QWhale & SARSAWhale: Hybrid Reinforcement Learning Algorithms for Energy-Efficient Optimization”
  - ”Telomerase Dynamics for Enhancing Computational Models and Optimization”
  - ”Understanding Quantum Processing Units (QPUs): The Future of Computing”
  - ”Balancing Energy Efficiency and Performance in Modern Processing Units: CPU, GPU, DPU, TPU, NPU, VPU, and QPU”
  - ”Comparative Analysis of TPUs and CPUs: Specialized Efficiency vs. Versatile Performance”
  - ”Liquid Neural Networks: Real-Time Adaptability and Temporal Processing Excellence”
  - ”Nuclear Fusion Dynamics: Reinforcement Learning and LLMs for Plasma Stability Optimization”
  - ”Scaling New Heights: LLaMA 3.1 405 B and H100 Tensor GPUs”
  - ”Exploring Mesop: A Comprehensive Python Web Framework Beyond Streamlit for AI and ML Applications”