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Akash Sivakumar

Python Developer

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EDUCATION

Master of Science in Computer Science **Expected May 2025**
Arizona State University **Tempe, Arizona, USA**
- CGPA: 3.81

Coursework: Data Visualization, Distributed Database Systems, Natural Language Processing, Planning/ Learning Methods in AI

Bachelor of Technology in Computer Science (Specialization in AI and ML) **June 2023**
Vellore Institute of Technology **Chennai, Tamil Nadu, India**
- CGPA: 3.865

Coursework: Computer Vision, Video Analytics, Medical Image Processing, Reinforcement Learning, Human-Machine Interaction

TECHNICAL SKILLS

Data Science & ML: TensorFlow, Keras, PyTorch, OpenCV, Jupyter, MLOps, NumPy, Pandas, Matplotlib, Scikit-learn, SciPy
Programming Languages: Python, C++, C#, .NET Framework, .NET WPF, ASP.NET, HTML, CSS, JavaScript, R
Databases: SQL, PostgreSQL, MongoDB, Data Modeling, ClickHouse, Amazon S3, Azure SQL, Apache Cassandra, Pinecone
Frameworks & Tools: Blazor, MAUI, Flask, Django, REST API, Git, CI/CD, Docker, Kafka, Teraform, JIRA, Kubernetes
Cloud Services: Amazon (EC2, S3, SageMaker, Lambda), Azure Machine Learning, Azure DevOps, Azure Databricks, Jenkins
Big Data & Performance Optimization: Spark, Hadoop, Performance Tuning, ETL Pipelines, Data Processing, System Integration

EXPERIENCE

Software Programmer Intern **May 2024 – July 2024**
AMBATECH LLC
- Independently developed and collaboratively contributed to two projects that evolved into new company products.
- Worked with a team to create a medical AI imaging application to mark affected tissues in laparoscopy procedures.
- Established partnerships with 10 new medical professionals to curate dataset of real-time medical images and videos.
- Created a GUI application using **Tkinter** to scan XML/PDF reports and select visual media for archived annotation files
- Administered a self-hosted CVAT AI portal for medical dataset annotation, managing user access and system operations.
- Leveraged **AWS** services, including **Amazon EC2** for hosting, **S3** for data storage, and **SageMaker** for model training.
- Deployed into **NVIDIA Jetson Orin** for real-world application.
- Led the development of a mobile application for surgical video recording and documentation using **MAUI.NET** and **SQLite**.
- Engaged in a team project to create a portal using **Blazor** framework to monitor device usage across networks like Verizon and AT&T, displaying activation, deactivation and usage reports.

RELEVANT PROJECTS

AI-based YouTube Video Summarizer **September 2022 – December 2022**
- Worked on an application that summarizes a YouTube video with **Flask**-powered frontend and audio processing.
- Leveraged OpenAI's GPT-3.5 Turbo via **API** services to generate concise and relevant video summaries.
- Implemented user testing with average rating of 4.5/5 from 10 participants on summary relevance and comprehensiveness.

Handwritten Equation Solver **August 2023 – December 2023**
- Developed a Flask-based UI for a handwritten equation recognition system that interprets and solves expressions like '5+2'.
- Designed and implemented interconnected **pipeline** stages with specific configurations for every stage of **ML lifecycle**
- Received a 4.6 rating out of 5 from 20 test users (ages 6-8), with requests to include more mathematical functions.

Real-time Web Traffic Analysis using Distributed Database **August 2024 – December 2024**
- Collaborated with a team to implement a real-time web traffic analysis system using **Kafka** for data streaming.
- Developed a **Grafana**-based UI for visualizing network traffic metrics such as bandwidth and packet frequency in real-time.
- Utilized **Clickhouse** for distributed storage and query processing, with overall integration performed by **docker-compose**.

ACHIEVEMENTS

- Completed the **Microsoft Certified: Azure Data Scientist Associate (DP-100)** credential in March 2025.
- Published paper on stock market analysis using ML, Python and **Neo4j**, visualizing and categorizing BSEIndia stocks based on market capital and volume of shares, as well as sentiment analysis of news captions *(CRC Press Taylor and Francis journal*).
- Published paper on skin cancer classification of DICOM images using a two-layered Multi-column CNN with 97.45% accuracy by simultaneous incorporation of images and metadata from tags. *(Neural Computing and Applications journal).*