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Akash Sivakumar

Data Scientist

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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 Core, .NET WPF, ASP.NET, HTML, CSS, JavaScript, D3.js, R
Databases: SQL, PostgreSQL, MongoDB, Data Modeling, Amazon S3, Azure SQL, Apache Cassandra, Pinecone, ClickHouse
Frameworks & Tools: Flask, Django, REST API, Git, CI/CD, Docker, Kubernetes, Kafka, JIRA, Snowflake
Cloud Services: Amazon (EC2, SageMaker, Lambda), Azure Machine Learning, Azure DevOps, Azure Databricks, Jenkins
Big Data & Performance Optimization: Spark, Hadoop, ETL Pipelines

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

Hand Gesture-Based Cricket Game using OpenCV **September 2022 – December 2022**
- Implemented real-time hand gesture recognition using key-point extraction from palm regions for interactive gameplay.
- Developed an AI-based opponent system to simulate a two-player cricket match with a **Python-based GUI**.
- Conducted user testing on 10 participants under varied lighting conditions and gesture styles, received average rating of 4.5/5.

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.

Forest Fire Prediction Using AutoML and Django **August 2024 – December 2024**
- Carried out explanatory and exploratory **data analysis** as well as feature engineering to produce cleaned tabular dataset.
- Trained classification models using **AutoML** from **Azure ML Studio** with ten different algorithms and scaling techniques.
- Created a user interface using **Django** to evaluate the best performing model based on real-time input data.

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).*