Samir Sanyal

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Education

Indiana University Bloomington **August 2024 – May 2026**
MS in Computer Science *Bloomington, IN*

Vellore Institute of Technology **June. 2017 – July 2021**
BTech in Computer Science *Chennai, TN*

Relevant Coursework

- Data Structures
- Algorithms Analysis
- Artificial Intelligence
- Systems Programming
- Software Methodology
- Database Management
- Internet Technology
- Computer Architecture

Experience

Dr Lalpathlabs Ltd **August 2021 – May 2024**
System Engineer *Gurugram, HR*

- Addressed complex enterprise challenges in AWS and Azure environments, developing cost and performance optimization strategies to enhance operational efficiency across both platforms. Improved efficiency by **65%**.
- Implemented a cost optimization strategy resulting in a significant annual cost reduction of **$6,500** in AWS services and **$10,000** in Azure services.
- Mastered cloud support and identity access management (IAM) while developing automation tools using SQL, Python, and PowerShell; generated streamlined workflows that increased efficiency by saving approximately **12 hours** weekly.
- Designed high-performance python automation scripts to automate manual daily tasks thus increasing the productivity by **45%**.
- Spearheaded the development of Key Query Language (KQL) queries, resulting in an **80%** reduction in manual labor for data analysis tasks. This optimization streamlined processes, reducing the time required to complete tasks from hours to just **5 minutes**.
- Engineered a comprehensive Continuous Integration/Continuous Deployment system leveraging best practices within AWS architecture resulting in reduced lead times for new feature rollouts totaling approximately **40%** efficiency improvement overall.

CoreEL Technologies **May 2020 – July 2020**
Summer Intern *Chennai, TN*

- Analysed core MATLAB functionalities to implement advanced image processing. Achieved **85%** accuracy.
- Applied spatial transformations and Otsu's Method in image processing, which led the model to work with a precision of **85%**.

Projects

Fire Alarm Fabrication, Capstone Project | *Arduino UNO, Python, Raspberry Pi, OpenCV* **July 2020 - April 2021**

- Engineered a robust fire alarm solution tailored for coal mining operations that ensures immediate flame detection within an effective radius of **80 cm** while limiting false positives under the cost constraint of **Rs 3,000**.
- Orchestrated the integration of flame and gas sensors into the fire alarm system by utilizing Arduino UNO.
- Implemented the development of the image recognition system using Raspberry Pi and the Pi camera. Developed Convolutional Neural Networks (CNN) and harnessed OpenCV to methodically analyze flame images, achieving an impressive **82%** accuracy rate.

Obstacle and Object Detection Car | *Python, Tensorflow, OpenCV, Arduino UNO* **May 2019 - July 2019**

- Designed a Bluetooth-controlled obstacle detection vehicle equipped with a Raspberry Pi camera and TensorFlow for traffic signal recognition.
- Achieved a 60 cm detection range for the ultrasonic sensor and developed a traffic signal module using OpenCV with a commendable accuracy of **78%**. Adapted and applied this model in a TopCoder hackathon to create a smart walking stick for the visually impaired and elderly, showcasing flexibility and innovation.

Technical Skills

Languages: C++, C, Python, Powershell, SQL, KQL, Java, JS
Database and Cloud tools: MSSQL, Postgres, MySQL, DynamoDB, AWS, Azure
OS & DevOps: Windows OS, Linux OS – Ubuntu, RHEL, Docker, GitHub, Git, CICD AWS, Azure Devops, Kubernetes

Certifications, Publications and Honors

Microsoft - Certified Azure Fundamentals July 2022
Certified AWS Cloud Practitioner July 2023
Microsoft SC-900 January 2024