Aditya Mohan

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EDUCATION

State University of New York at Binghamton, Vestal, New York (GPA – 3.95/4.0)
Master of Science in Computer Science Jan 2022 – Dec 2023
Relevant Courses: Adv. Object-Oriented Programming, Operating Systems, Visual Information Processing, Computer Architecture and Organization, Deep Reinforcement Learning, High Performance Computing (ongoing)

Jaypee University of Information Technology, Solan, India (GPA – 7.0/10.0)
Bachelor of Technology in Computer Science Jul 2016 – Jul 2020
Relevant Courses: Image Processing, Software Engineering, Graph Algorithms, Business Analytics, Deep Learning, Software Engineering

TECHNICAL SKILLS

Programming Languages: Python, C++, C, Java, SQL, HTML/CSS.
Tools and Technologies: Git, Flask, Postman, PostgreSQL, AWS Textract, REST.
Libraries: OpenCV, PyTorch, TensorFlow, Regex, Matplotlib, Pandas, Numpy

WORK EXPERIENCE

Strategic Partnership for Industrial Resurgence (SUNY SPIR), Binghamton University Aug 2022 – Present
Graduate Assistant

- Conducting research under the guidance of Prof. Kenneth Chiu and in collaboration with ThermoAI
- Performing data analysis and studied the consumer usage patterns from the energy usage data of about 40 residential buildings on campus that houses around 14000 students and derived insights about behavior of different batches of students over the years
- Researching the impact of methods of gamification coupled with machine learning can have to develop energy-efficient behaviors in consumers

Egregore Labs, New Delhi, India Oct 2020 – Dec 2021
Analyst Developer - Engineering

- Researched and developed the in-house OCR engine for scanned financial documents and achieved 90% accuracy as compared to AWS Textract using Python, Tensorflow, and Flask
- Implemented the intelligent document information extraction pipeline feature with a dual approval system which handled thousands of documents with over 50 points of information to be collected using Postgresql, SqlAlchemy, Flask, and Pattern Recognition
- Brainstormed and worked on a pilot project based on automating the extraction of data from complex financial documents for one of the largest P&C insurance company and lead the development and planning of backend APIs required for the human-in-the-loop version of the same product (Python, Flask)
- Worked on the development of modules for OCR and document classification for an AI-driven enterprise solution that automated document processing & surfaced critical insights which enabled quicker & better decisions

SELECTED PROJECTS

A New Technique for Image Captioning based on Hierarchical Clustering and Deep Learning

- Employed hierarchical clustering of features extracted from images (MS-COCO dataset) using VGG-16 CNN architecture to form different clusters based on the features present in the images
- Trained an encoder-decoder model on sampled smaller datasets from unique clusters, achieving better performance with a total dataset reduction of 40%

An Out-of-Order CPU Simulator

- Implemented an APEX CPU simulator in C programming language for an out-of-order processor
- This simulator comprised of register renaming, load-store queue, issue queue, dcache, and a reorder buffer as well
- A static branch prediction was added as well in the form of a small BTB

Container Class Template (Similar to STL Map in C++)

- Implemented from scratch a container class template similar to Map in C++ STL
- The underlying logic for logarithmic time search, insertion, and deletion was implemented using skip-lists
- Developed most of the supporting APIs as mentioned in the Map library reference