Abhinand Jha

abhinand20.github.io
abhinanj@andrew.cmu.edu|412.519.8559|linkedin.com/in/abhinandj

EDUCATION

CARNEGIE MELLON UNIVERSITY
MS IN ELECTRICAL AND COMPUTER ENGINEERING
Minor : Machine Learning
CGPA: 4.0 / 4.0
Dec 2023 | Pittsburgh, PA

MANIPAL UNIVERSITY
BS IN ELECTRICAL ENGINEERING
Minor : Embedded Systems
CGPA: 9.02 / 10
Aug 2020 | Manipal, India

COURSEWORK

Machine Learning for Engineers
Introduction to Deep Learning
Data, Inference & Machine Learning
Natural Language Processing
Foundation of Computer Systems
System Software Engineering (TA)

CERTIFICATIONS

Deep Learning Specialization (Coursera)
TensorFlow Developer (Coursera)
NLP Specialization (Coursera)
IBM Data Science (Coursera)
Advanced Python Bootcamp (Udemy)

SKILLS

PROGRAMMING LANGUAGES
C/C++ • Python •JavaScript • SQL
FRAMEWORKS AND TOOLS
Pytorch • Tensorflow • NumPy • AWS • Scikit • NLTK • Jenkins

AWARDS

- Secured position 1/30 in a Machine Learning (NLP) hackathon at Deloitte
- Performance based applause awards (x2) at Deloitte
- Gold medal and certificate of merit for academic excellence in college –rank 7/172 students
- 1st Position – Carnegie Mellon University Soccer League
- Top 50 all over India - National Cyber Olympiad (NCO)

EXPERIENCE

DELOITTE | DATA ANALYST
Sept 2020 — Dec 2021 | Hyderabad, India

- Implemented backend for an Auto-ML web application by utilizing PyCaret python library and MySQL to develop robust machine learning models, collaborated with front-end team to build APIs using Flask
- Pioneered automation effort to migrate over 50M data points from legacy databases to cloud for a national bank, saving 40 man-hours/week overall
- Developed CI/CD workflow in Jenkins, automated the process of testing and onboarding new features allowing for faster deployments into production
- Deployed end-to-end data warehousing and migration solutions in production for clients by leveraging AWS EC2, Redshift, S3 and ETL Glue following agile practices

RESEARCH

CARNEGIE MELLON UNIVERSITY | GRADUATE RESEARCHER
Jan 2022 - Present | Pittsburgh, PA

- Led effort to conceptualize & contrive a novel self-supervised deep learning method for few-shot segmentation of MRI/CT scans, achieving performance comparable to state of the art
- Performed extensive ablation studies by evaluating multiple models on diverse datasets and documented the results for publishing purposes
- Implemented and maintaining a codebase of over 5000 lines, involving multiple developers, through weekly code reviews and code versioning tools
- Leading a team of 5 interns to devise an unsupervised Computer Vision algorithm for sub-nanometer particle detection in electron microscopy images

PROJECTS

AUTO-ONTO (Python, Hackathon winning submission)
Application to automatically extract keywords and inherent hierarchical relationships from large text corpus by employing NLP, Word Embeddings and clustering

CodeRem (TypeScript, Hackathon submission)
A web application that helps individuals learn to code through a spaced repetition-based learning algorithm and peer-to-peer code reviews, developed in TypeScript

CpPyox Programming Language (C++)
High-level dynamically typed language, written in C++ with a tree-walk Interpreter, Lexer, Scanner, Error synchronization and Automatic garbage collection, using visitor design pattern

Real time face mask detection (Python, RaspberryPi)
App to detect if a person is wearing a face mask by leveraging real time video feed from Raspberry Pi and computer vision

PUBLICATIONS

[1] A. A. El-Moursy, A. M. Darya, A. S. Elwakil, A. Jha, and S. Majzoub. Chaotic clock driven cryptographic chip: Towards a DPA resistant AES processor. *IEEE Transactions on Emerging Topics in Computing*, 10(2):792–805, 2022. https://ieeexplore.ieee.org/document/9301437.