

# Abhinand Jha

[abhinand20.github.io](https://abhinand20.github.io)

[abhinanj@andrew.cmu.edu](mailto:abhinanj@andrew.cmu.edu) | 412.519.8559 | [linkedin.com/in/abhinandj](https://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

Mathematics & CS for Machine Learning

Foundation of Computer Systems

Data Inference & Machine Learning

Natural Language Processing

## 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 • SQL • Verilog

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
- 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 to develop robust machine learning models and 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
- Deployed end-to-end data warehousing and migration solutions in production for clients by leveraging AWS EC2, Redshift, S3 and Glue

## 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
- Leading a team of 5 interns to devise an unsupervised algorithm for sub-nanometer particle detection in electron microscopy data

UNIVERSITY OF SHARJAH | UNDERGRADUATE RESEARCHER

Jan 2020 – Sept 2020 | Sharjah, UAE

- Programmed an algorithm in verilog to protect embedded processors against passive Side Channel Attacks, achieved state of the art performance
- Publication accepted in one of the top journals in computational research

## PROJECTS

**AUTO-ONTO (Hackathon winning submission)**

Application to automatically extract keywords and inherent hierarchical relationships from large text corpus by employing NLP, Word Embeddings and clustering

**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

**Abstractive text summarization for academic text (Python)**

Tool to mine text from public academic archives and generate short abstractive summaries with GPT-2 model

## 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>.