

Nayeem Mohammad

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RESEARCH INTEREST

- Computer Vision, Neuroimaging, Natural Language Processing, and Deep Learning

EDUCATION

University of South Carolina

August 2022 – Present

Doctoral of Philosophy in Computer Science

Coursework: Data Mining, Reinforcement Learning, Analysis of Algorithms, Compiler Construction, and Neurosymbolic AI

North South University

January 2016 – May 2020

Bachelor of Science in Computer Science and Engineering

CGPA:3.58/4.0

- **Cum Laude** in Computer Science and Engineering
- **Coursework:** Pattern Recognition, Machine Learning, Data Communication and Network, Design and Analysis of Algorithms, Database Management System, Computer Organization and Architecture, Data Structures and Algorithms

Notre Dame College

July 2012 – May 2014

GPA:5.0/5.0

PROFESSIONAL EXPERIENCE

Graduate Research Assistant

August 2023 – Present

- Artificial Intelligence Institute of South Carolina (AIISC)
Supervised by **Dr. Amit Sheth**; Founding Director of AI Institute of UofSC

Cabinet Secretary of Professional Development

August 2023 – Present

- Graduate Student Association

Graduate Teaching Assistant

August 2022 – Present

PROGRAMMING EXPERIENCE

CODEFORCES

Handle : **Initiated**

- Solved **275 problems**; participated in **46 online contests** in codeforces


LightOJ

Handle : **initiated**


- Solved **64 problems** from one of the most tough online judges

PROJECTS


Sign-Language-App

- Developed a WebApp using Computer Vision to detect hand signs that takes real-time video inputs
- Used Deep Learning Models (VGG16 and MobileNet) to recognize the letters associated with the signs
- Optimized MobileNet using loss functions, optimizers, and activation functions
- Designed the WebApp using Flask; Integrated the Deep Learning model and Google API (text-to-speech)
- **Used Technology:** Python, OpenCV, Deep Learning, Google API, Colab, Flask, HTML, CSS  [GitHub](#)


Simple Neural Network

- Developed a C++ implementation of a simple Neural Network that takes functions, input values (x), weights, and biases as inputs
- Uses the Shunting-yard algorithm to parse the input function, dynamic programming solution for the differential equation and calculates the prediction value (y)
- Identical version of the C++ implementation in GOLang
- **Used Technology:** C++, GO  [GitHub](#);


BlogApp

- Built a blog using Django and HTML/CSS
- Connected SQLite Database with the blog
- Built CRUD operations and federated login system
- **Used Technology:** Python, HTML, CSS  [GitHub](#)

Siamese Network

- Implemented Siamese network to perform a person re-identification using One-Shot Learning
- Added a layer of Normalized Cross-correlation to improve the performance
- Optimized and Significantly improved results in terms of time complexity
- **Used Technology:** Deep Learning, OpenCV, Image Processing, TensorFlow, Python  [GitHub](#)

Web Scraper

- Designed a web crawler that can scrape texts from websites using HTML parsing on source code
- Can extract images and HTML div(s) from websites
- A Flask app is wrapped around the crawler with a scraping option that takes links as inputs
- **Used Technology:** Scrapy, BeautifulSoup4, Flask, Python  [GitHub](#)

SKILLS

Machine Learning : Linear/Logistic Regression, Decision Tree, SVM, Naive Bayes, KNN, K-Means, Random forest, Deep Learning (CNN, RNN, R-CNN, VGG16, MobileNet, YOLO, Siamese Network, etc.)

Languages : C/C++, Python, GOLang, PHP, Java

Frameworks : Django, Flask, Laravel

Libraries : TensorFlow, PyTorch, OpenCV, Numpy, Pandas, Scikit-learn, etc.

Platforms : Kaggle, Colab, GCP, AWS

Databases : MongoDB, MySQL, SQLite, PostgreSQL

Scripting : \LaTeX , HTML, CSS, Bash

Version Control : GitHub, Bitbucket, Jira

AWARDS

Academic Waiver : Recipient of a **merit-based waiver of 25%** from **Summer 2017 semester** till graduation