

Shazzad Hasan

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Education

Durham University

MSc in Scientific Computing and Data Analysis (Specialisation: Financial Mathematics), Grade: 2:1 (Expected)

Durham, UK

2023-2024

North South University

BSc in Electrical and Electronic Engineering (Specialisation: Artificial Intelligence), CGPA: 3.25/4.00

Dhaka, Bangladesh

2015-2020

Skills Summary

Fields of Interest: Data Analytics, Causal Inference, Machine Learning, Deep Learning, Software Development

Key Skills: Exploratory Data Analysis, Querying Databases, Creating Dashboards, Building Machine Learning and Deep Learning Models, Mathematical Modeling and Simulation, Strategic Thinking

Programming: Python, SQL, C++, C, MATLAB, PostgreSQL, SQLite, PyTorch, Keras, scikit-learn, pandas, NumPy, SciPy, Matplotlib, FastAPI, SQLAlchemy, BeautifulSoup, CUDA, OpenMP, likwid, gprof, Bash, HTML, CSS

Technologies: Tableau, Excel, Git and GitHub, Unix/ Linux

Experience

Career Break, Travel

Jun 2023-Sep 2023

- Took time off to travel and explore different cultures across Bangladesh and the UK

Career Break, Professional Development

Jun 2022-May 2023

- Studied the MITx MicroMasters Program in Statistics and Data Science. Strengthened foundational knowledge in Data Structures, Algorithms, Machine Learning and Deep Learning

Data Analyst, Mirailit Limited, Dhaka, Bangladesh

Feb 2021-May 2022

- Written complex SQL queries to manage and retrieve data from databases. Developed and maintained dashboards for data insights and collaborated with teams to gather requirements and presented data-driven recommendations

Research Assistant, North South University, Bangladesh, Advisor: Dr. Mohammad Monir Uddin

Jan 2017-Dec 2018

- Research focused on model order reduction of large-scale dynamical systems and feedback stabilization of unstable dynamical systems using reduced order models. Published two papers at international conferences

Projects

Detecting Fraudulent Accounts in the Ethereum Ecosystem (Python, scikit-learn, Keras)

- Developed machine learning models to detect fraudulent accounts in the Ethereum ecosystem

Characterizing the Ethereum Address Space (SQL, Python, scikit-learn)

- Built a machine learning model to automatically categorize unknown Ethereum Addresses

Predicting Pulmonary Fibrosis Progression Using Deep Learning (Python, Keras, scikit-learn)

- Worked with a team to develop a model predicting disease progression in pulmonary fibrosis patients

Automated Labeling of Information Technology Job Circulars in Bangladesh (Python, scikit-learn, BeautifulSoup)

- Web-scraped IT job circular data and developed a clustering model to categorize unknown job circulars

Siamese Neural Networks (Python, PyTorch)

- Implemented a simple PyTorch version of the “Siamese Neural Networks for One-shot Image Recognition” paper

Performance Analysis and Efficient CUDA Implementation of Matrix Arithmetic (C++, CUDA, likwid, gprof, Bash)

- Visualized execution times of serial code to identify hotspot functions and plotted roofline model. Used CUDA to implement loop parallelism within compute functions and extended this to task parallelism

Parallelization and Scaling Analysis of 2D Reaction-diffusion System (C, OpenMP, MPI, Bash)

- Implemented parallel code of the serial implementation of a variant of FitzHugh-Nagumo model using OpenMP and MPI. Compared the performance of the serial code against the parallelized version and investigated the strong scaling

Car Sharing Web App (Python, FastAPI, SQLAlchemy)

- Created a RESTful API for a Car Sharing Web App and designed a database to store user and vehicle data

Crypto Portfolio (Python, SQL, SQLite)

- Built a command line application to manage a cryptocurrency portfolio with live prices

Gray-Scott Reaction-diffusion System Simulation Software (C++, GoogleTest, git, GitHub)

- Collaborated with a team to develop an agile, responsible, and collaborative software. Used GoogleTest framework for unit testing, created a build system, and implemented continuous integration

Percolation Simulation (Python)

- Simulated Eden and DLA cluster growth models and examined percolation on a 2D lattice

Graph Analysis Using SAT Solver (Python, NetworkX, Z3)

- Constructed graph structures from data and generated DIMACS SAT instances. Employed a SAT solver to find chromatic, clique, and independence numbers and checked for acyclic 2- and 3-coloring

Software Project Management

- Teamed up with a group to make a project management plan for a client's software development