

# AADRISH MAHMOOD

+92-317-6415731 | [aadrishmahmood7@gmail.com](mailto:aadrishmahmood7@gmail.com) | [LinkedIn](#) | [Github](#)

## EDUCATION

### Lahore University of Management Sciences (LUMS)

Bachelor of Sciences in Computer Science

Sep. 2020 – May. 2024

CGPA : 3.30

## EXPERIENCE

### Teaching Assistant - CS 100 : Computational Problem Solving

Lahore University of Management Sciences (LUMS)

Fall 2022, Spring 2023

Lahore, Pakistan

- Developed and Graded, Labs and Quizzes on weekly basis
- Provided guidance and evaluation for six projects throughout the semester
- Conducted Regular Office Hours and tutorials to offer supplementary assistance to students

### Teaching Assistant - CS 200 : Introduction to Programming

Lahore University of Management Sciences (LUMS)

Fall 2023

Lahore, Pakistan

- Developed and Graded Labs, Quizzes and Assignments on weekly basis
- Conducted Regular Office Hours and tutorials to offer supplementary assistance to students

### Coding Instructor for Web Development and Data Science

Government School

July. 2023 – July. 2023

Skardu, Pakistan

- Volunteered for a 10-day tour to a Government school in Skardu, travelled around 600 kilometers from my city
- Conducted introductory programming sessions for a group of 150 students
- Focused on inspiring and motivating students by introducing them to the world of coding and highlighting the potential career opportunities it offers
- Committed time and effort as a volunteer to positively impact the lives and educational journey of students in Skardu, who have limited exposure to such opportunities

### Team Member for Media and Promotions

SPADES (Society for Promotion And Development of Engineering and Science)

Sept. 2022 – May. 2023

Lahore, Pakistan

- Participated in one of the prestigious science Olympiad of Pakistan (PSIFI), organized by SPADES, as a member of the Media and Promotions team.
- Crafted captivating social media posts and graphics, driving increased participation and awareness for the event
- Engaged in voluntary work for the Social Responsibility Program (SRP) by SPADES, with a primary focus on promoting science education in underprivileged schools

### All Rounder Player for LUMS Cricket Team (LCT)

Lahore University of Management Sciences (LUMS)

Dec. 2021 – Sept. 2021

Lahore, Pakistan

- Actively contributed as an all-rounder player for the LUMS Cricket Team, playing part in both batting and bowling roles

## CERTIFICATIONS

Foundations of User Experience Design (Google)

Introduction to Cybersecurity Tools and Cyber Attacks (IBM)

Fundamentals of Accelerated Data Science with RAPIDS (NVIDIA)

Fundamentals of Deep Learning (NVIDIA)

## RESEARCH

### Analysis of non-landing pages of Pakistan's public websites

Dec. 2022 – May. 2023

- Conducted a comprehensive analysis of landing and non-landing pages across nearly 35 public websites in Pakistan, focusing on affordability and performance metrics
- Utilized Screaming Frog SEO Spider to crawl internal pages, Wget for retrieving website contents, Google Lighthouse to benchmark websites and generate detailed reports on their performance metrics
- Conducted analysis using three configurations: 2G` Mobile, 4G` Mobile, and WiFi` Desktop, providing a comprehensive evaluation of websites under different network conditions

## PROJECTS

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- Distributed, Fault-Tolerant Key-Value Store using RAFT Consensus** | *GoLang* Sept. 2023 – Dec. 2023
- Developed a distributed fault-tolerant key-value data store capable of achieving consensus using the Raft consensus algorithm
  - It supports both Leader Elections and Log Replication with persistence
- RUNG Card Game** | *React, TypeScript, HTML/CSS, socket.io* May. 2023 – May. 2023
- Developed a four-player local card game, RUNG, using Express, React, and Node, with the server implemented in TypeScript. Source code is available on my GitHub account
  - Utilized React.js and the useState hook for frontend development and state storage
  - Leveraged React's state management for an immersive gaming experience
- Authorship Attribution using ML** | *Python, numPy, pandas, scikit learn* Nov. 2022 – Dec. 2022
- Developed a Twitter-based Authorship Attribution Application achieving over 85% accuracy with data from following Twitter accounts: BBCBreaking, Caradelevingne, justinbieber, ImRaina, and shahidkapoor
  - Applied various machine learning models, including k-nearest neighbors (k-NN), neural networks (NNs), ensemble methods like the random forest classifier and many others, out of which highest accuracy was achieved with Random Forest Classifier
- Analysis of Sindh's Educational Dataset** | *Python, numPy, pandas* Feb. 2023 – May. 2023
- Conducted an in-depth analysis of Sindh's educational dataset to identify factors and facilities influencing enrollment discrepancies across districts
  - Explored and presented various features within the dataset to understand the correlations and patterns impacting student enrollment in different districts of Sindh
  - Trained a machine learning model to predict student enrollment based on provided facilities within a district
- Peer to Peer File Sharing Application using DHT** | *Python, socket, threading* March. 2022 – May. 2022
- Implemented decentralized indexing and lookup of files through DHT (Distributed Hash Table), enabling direct communication and file sharing among connected peers without a centralized server
  - Designed a robust decentralized system where each peer maintained a local hash table containing information about available files, successors, and predecessors, ensuring efficient and fault-tolerant file transfers
- Multi-Threaded Library Development** | *C language* Nov. 2023 – Nov. 2023
- Developed a basic threading library that utilized registers to store Thread Control Blocks (TCBs) and implemented application-level context switching through the setjmp library
  - Extended the library to include semaphores and mutexes, leveraging these synchronization tools to address real-life problems
  - Applied the threading library to solve practical challenges such as optimizing laundry scheduling and managing doctor appointments through the effective use of semaphores and mutexes
- Employee Attendance and Leave Management System for DevSinc Company** | *MERN* Jan. 2023 – Ongoing
- Developing a web application using MERN stack (MongoDB, Express, React, and Node) to manage employee attendance and leave requests for Devsinc Company, this is an external project.

## RELATED COURSEWORK

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Advanced Programming : A-  
Network Centric Computing: A-  
Operating Systems: A-  
Network Security: A-  
Principles and Techniques of Data Science: A  
Databases : A-  
Applied Statistics: A  
Artificial Intelligence: A-  
Machine Learning: B+  
Software Engineering: **Grade Pending**

## TECHNICAL SKILLS

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**Languages:** Python, C/C++ , TypeScript, HTML/CSS, Haskell, Golang, Solidity, PHP  
**Frameworks:** React, Node.js, Express, Django, MongoDB, SQL  
**Libraries:** pandas, NumPy, Matplotlib, scikit learn, TensorFlow, Keras, RAPIDS