Muhammad Usaid Rehman

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Education

University of Windsor Windsor, ON
MSc. Computer Science [Incomplete] *Aug 2022 – Dec 2023*
Research Focus: Cryptography & Computational Mathematics

Habib University Karachi, Pakistan
BSc. Computer Science, Minors: Mathematics & South Asian Music *Aug 2018 – May 2022*
Scholarship: 70% Excellence Scholarship awarded for A-Level results.
GRE Score: 318, TOEFL iBT: 112

Certifications:

- FrontEnd Engineering (Career Path) – Codecademy [Certificate Link]
- Create a Backend App with Javascript (Skill Path) – Codecademy [Certificate Link]
- Design Databases with PostgreSQL (Skill Path) – Codecademy [Certificate Link]
- Fundamentals of Cybersecurity (Skill Path) – Codecademy [Certificate Link]
- Applied Data Science Specialization (IBM) – Coursera [Certificate Link]

Experience

Realtor Buddy (Remote)
FrontEnd Developer (Contract) *April 2024 – May 2024*

- Designed a user-interface/user-experience for a landing page (https://www.realtor-buddy.com) for a product meant for realtors in the United States.
- Wireframed user-interface for both desktop and mobile versions of the website via Figma.
- Developed complete front-end using React, incorporating best practices for long-term maintainability and helped implement subscription model and incorporating third-party API in both the backend and frontend to handle subscriptions.

University of Windsor Windsor, ON
Graduate Teaching Assistant *Sep 2022 – Dec 2022*

- Assisted faculty with COMP 4150: Advanced and Practical Database Systems, and COMP 4670: Network Security.
- Designed, conducted and graded weekly labs, graded weekly assignments, quizzes, and exams in a timely manner and conducted regular office hours for individual instruction.
- Assisted with course organization, liaised with faculty and students, and proctored exams.

World Wildlife Fund Pakistan (Remote)
Machine Learning Intern *Summer 2021*

- Co-developed a bird image recognition model as proof-of-concept for future ecology use.
- Scraped the internet using BeautifulSoup and also manually, to collect images of birds and implemented a data preprocessing pipeline to construct training and testing sets.
- Experimented with various Convolutional Neural Networks (CNNs), including ResNet50 to obtain 90% accuracy upon testing.
- Produced a final report detailing the model performance, deployment guide, and future enhancements.

Habib University Karachi, Pakistan
Teaching Assistant *Sep 2020 – May 2022*

- Worked as a teaching assistant for the courses CS 440: Design & Analysis of Algorithms, CS 212: Nature of Computation, CS 202: Engineering Mathematics, CS 102: Calculus II.
- Conducted weekly tutorials to revise concepts introduced in class.
- Graded quizzes, assignments and conducted office hours to provide individual assistance.

Projects

A Novel Approach to Protein Complex Identification via Ensemble Clustering [GitHub]

Final Year Project for BSc. Computer Science at Habib University. Conducted an extensive literature review and implemented a novel clustering algorithm to detect protein complexes in an interaction network, using deep learning, genetic algorithms and graph-theoretical algorithms.
Python, Numpy, Seaborn, Pytorch, LaTeX

ExpenseMate – Portfolio Project [GitHub]

A full-stack personal finance management dashboard, designed using React/Redux + Material UI. Stores data in a MongoDB database hosted on MongoDB Atlas accessed through a rigorously tested RESTful API. Visualizes, summarizes and presents expense and income history/trends using charts and tables for easy monitoring of financial health.
React, Redux, Material UI, Express, Mongoose, Jest, Docker, Swagger

MultiStage Optimization for Combinatorial Optimization Problems [GitHub]

Worked on an independent research project in Summer 2021 under the guidance of Dr. Shahid Hussain to implement a chain of multistage optimization algorithms on matrix multiplication and other combinatorial problems. Implemented the algorithm in C++ and analyzed results empirically using Python.
C++, Bash, Python, LaTeX

Spotify Jammming – Portfolio Project [GitHub]

Portfolio project – https://spotify-jammming.vercel.app – using React.js, styled with Emotion. Wireframed, designed, and completed a project to practice and improve web development skills. Worked with the Spotify API to search tracks, display album art & album details; and save a playlist to users' Spotify account.
JavaScript, React.js, Emotion, HTML, CSS, Figma

Skills & Interests

Programming Languages: Python (multiple libraries including SageMath), JavaScript, TypeScript, C, C++, Rust, Bash, Prolog, R
Web Development: *Frontend:* React, Redux, Angular, Emotion, p5.js + WebGL, HTML, CSS
Backend: Node.js, Express, Django, Flask
Tools: npm, webpack, Jest, react-testing-library, Babel, Vite
UI/UX Design: Chakra UI, Material UI, Figma, WireFraming
Databases: MongoDB + Mongoose, MySQL, PostgreSQL
AI/ML & Data Science: Scikit-learn, Pandas, TensorFlow, Pytorch, Plotly Dash
DevOps & Tools: Git/GitHub, testing via Mocha + Chai, Linux, CI/CD (GitHub Actions)
Theoretical Skills & Interests: Design & Analysis of Algorithms, Natural Computing, Agent-Based Modelling, Theory of Computation, Cryptography, Pure Mathematics