

Mustafa Mannan

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EDUCATION

University of South Florida

Tampa, FL

Bachelor of Science in Computer Science

August 2021 – May 2025

- Relevant Coursework: Programming Concepts, Data Structures, Program Design, Discrete Mathematics, Automata Theory, Linear Systems, Analysis of Algorithms, Software Engineering, Operating systems, Database Design

TECHNICAL SKILLS

Languages: Python, C/C++, C#, JavaScript, SQL, HTML/CSS, PostgreSQL

Frameworks: React, Django, Flask

Developer Tools: Git, Docker, AWS, VS Code, PyTorch, NumPy, Scikit-learn, TensorFlow, Keras, Tableau, R

Skills: Bash Script, Full-Stack Development, API Integration, Object-Oriented Programming, Automation, Deep Learning, Software Development, Advanced Machine Learning Techniques, Neural Network Stability Optimization

EXPERIENCE

AI/ML Research Assistant

June 2024 – Present

TKAI Research Lab

Tampa, FL

- Conducting in-depth analysis of neural network stability, focusing on architectures like RNNs, LSTMs, and Transformers.
- Applying higher-order methods to improve stability and reduce sensitivity to adversarial attacks.
- Developed a visualization framework for Stack RNNs to track activations during CFL sequence processing.
- Implemented cross-validation techniques to ensure model stability across diverse datasets.
- Optimized neural architectures to reduce computational complexity without sacrificing accuracy.

Co-Founder & Software Developer

April 2024 – Present

Jamaa

Tampa, FL

- Led a team to co-develop a cross-platform mobile app using React Native and Django, connecting users with their local Muslim community
- Engineered backend with Redis caching and optimized PostgreSQL queries, reducing server load times by 50%.
- Designed and implemented an algorithm to display nearby mosques and events, cutting average response time from 200ms to 65ms.
- Deployed the app using AWS Elastic Beanstalk with Docker, ensuring 99.9% uptime.
- Built 15+ RESTful APIs and implemented JWT authentication with role-based access control.

PROJECTS

Stock Handler | C#

December 2023 – March 2024

- Created a tool to identify market trends through data visualization and pattern recognition techniques.
- Integrated C# for efficient extraction and processing of CSV data.
- Utilized object-oriented programming to ensure modularity and maintainability of the codebase.

Soccer Analysis: ML Approach | Sci-kit, Pandas, NumPy

July 2023 – October 2023

- Developed an ML model using GBMs and LSTM networks to predict and rank soccer player efficiency.
- Achieved 92% prediction accuracy through feature engineering and advanced model tuning.
- Created composite metrics for player performance assessment, combining traditional and advanced indicators.

LEADERSHIP & EXTRA-CURRICULARS

USF NSBE | Professional Development Chair

March 2024 – Present

- Lead USF NSBE members in a project teaching Git, web development, and deployment, with the final project focused on building and launching the USF NSBE website.
- Hosted multiple events with corporate sponsors, facilitating connections between members and industry professionals to enhance career development opportunities.
- Orchestrating professional development initiatives for USF NSBE, including resume workshops, mock interviews, career fairs, and networking events with corporate sponsors