MOHAMMED TIJANI

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PROFESSIONAL EXPERIENCE

The Research Foundation for The State University of New York — Albany, New York
Undergraduate Research Assistant — March 2025 – Present
Tech Stack – Python, Pandas, NumPy, Matplotlib, scikit-learn

- Assist with the deployment, calibration, and maintenance of high-grade air quality instruments and low-cost sensor servicing.
- Processed, cleaned, and validated large-scale air quality datasets, 16,000+ data points over 2 years to prepare data for analysis and modeling.
- Developed Python scripts utilizing Pandas and Matplotlib to generate comparative data visualizations, such as customized box plots, for analyzing air quality trends and anomalies across different monitoring network types (e.g., NYC Mesonet, Micronet).
- Engineered features (e.g., one-hot encoding for location/season) and trained a Random Forest Classifier model on extensive datasets (750,000+ data points) to predict pollutant types based on environmental and temporal features.
- Analyzed and interpreted complex air quality data by creating statistical summaries (e.g., model performance metrics) and visualizations (e.g., classification heatmaps, feature importance plots) to identify patterns.

BEAM — Manhattan, New York
Math Teaching Assistant Intern — July 2024 – August 2024

- Mentored and guided 20+ middle school students through a "100 problem challenge," covering foundational and advanced mathematical concepts including Game Theory, Number Theory, and Combinatorics.
- Designed and implemented hands-on teaching methods, utilizing physical objects and manipulatives, using blocks to model combinatorial possibilities, colored tokens for game theory payoffs, or demonstrating logic puzzles like the counterfeit coin problem with actual coins as class-wide visual aids to explain abstract concepts.

Flash Application — Remote, New York
Development Lead — March 2019 – August 2022
Tech Stack – .NET, C#, Java, Redis, MySQL, Git

- Developed and launched a flash game, building a community on social applications of 5,500 members over 3 years.
- Led a team of 4 developers and 5 artists to release frequent updates and design new mechanics (e.g., Projectile Ricochet, Community Market, Battle Pass, Global raids) to meet player base demands.
- Migrated the database of 5000+ players from MySQL to Redis, leveraging the in-memory storage and data structures to make the query time up to 4 times faster, offering a smoother gameplay experience at a cheaper cost.
- Managed a team of 20+ members, improving cross-functional communication and data accessibility by implementing data replication and synchronization between European and U.S. servers (enabling real-time updates/collaboration), and organizing team tasks using Discord and GitHub for enhanced visibility.
- Achieving 15-35% monthly player growth consistently over a year, generated $10K in annual revenue, and drove a game runtime of 99.8%.

PROJECTS

CAPSTONE
CGM Application
Tech Stack: JS, expo, Python, Tableau Public, NumPy, Pandas, Git, React

- Identified a growing need for proactive diabetes management tools that not only monitor but also predict glucose fluctuations.
- Trained a Machine Learning model using the Deep Forest algorithm in Python on historical time-series glucose level data (14M+ data points from 400+ individuals), leveraging university high-performance computing resources to generate predictive insights (e.g., caution alerts).
- Designed and delivered a Continuous Glucose Monitoring (CGM) application with real-time glucose monitoring by integrating various user health inputs (e.g., meal logs, activity data), a predictive tool analyzing trends every 5 minutes via server API calls, and data visualizations (e.g., glucose trend graphs using Tableau Public and react-native-chart, predictive alerts for potentially abnormal levels) to empower end-users.

YRBIS
Self-Created Business Application
Tech Stack – JS, expo, AWS, OpenAI, Git, React, AWS, DynamoDB

- Identified a need for small business promotion, leading to the creation of a full-scale Android/iOS application (using React Native/Expo) to address the need for increased small business visibility and streamline the business creation experience by enabling users to post and promote their businesses.
- Designed and implemented key features including secure user authentication for onboarding. AI-assisted business description crafting and tag generation alongside location fetching/display for post creation, and automated content appropriateness checks (OpenAI API) for content moderation to simplify user workflows and ensure platform integrity.
- Streamlined the business creation experience and demonstrated scalable mobile app architecture with an AI-enhanced user interface, utilizing AWS DynamoDB for backend data storage.

EDUCATION

University at Albany — GPA: 3.8
Degree: Bachelor of Science (B.S.) in Computer Science and Applied Mathematics; Minor in Mathematics
Expected Graduation: May 2025

Skills: Java, JavaScript, HTML, CSS, Frontend, Power BI, MS Office Suite, Statistical Analysis, Cloud Computing, Version Control, GitHub, Amazon Web Services, PostgreSQL
Tau Epsilon Phi, Incorporated (*New Member Educator)*