MD HAMIM MAHDIE

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SKILLS

Programming Languages: Python, Java, JavaScript, Swift, MATLAB, R
Developer Tools: SpringBoot, Flask, NGINX, Django, Docker, Kubernetes, Google Cloud, SQL, Firebase, MongoDB, Git
Data Tools: PyTorch, TensorFlow, Keras, Pandas, scikit-learn
Miscellaneous: React, NodeJs, Vite, BootStrap, Tailwind CSS, HTML, CSS, REST API, Jupyter Notebook, Google Colab

EXPERIENCE

Machine Learning Research Assistant   **Trinity College, Hartford, CT**   January 2024- Present
Enhancing Economic Fraud Detection in Auto Insurance claims with Machine Learning
- Utilize **Scikit-Learn**, **TensorFlow**, **NumPy**, and **Keras** for model development, conducting over 100 experiments to fine-tune parameters and optimize performance.
- Analyze comprehensive datasets and applied data preprocessing and one-hot-encoding to leverage from categorical variables aimed at improving model accuracy from 70-80% to at least **90%**.
- Conduct a comparative study on **deep learning** architectures (e.g., LSTM, DNN) and **machine learning** models (e.g., Random Forest, XGBoost) to identify the appropriate algorithms to treat the dataset.

IT Consultant   **Library and IT Services, Trinity College, CT**   February 2024 - Present
Hartford, CT
- Provide tech troubleshooting to students/staff on 75 issues weekly on **ishelp** ticketing system resolving 100% within target timeframes. Guided library patrons in utilizing the 900,000+ collection resources.
- Configure and maintain multi-factor authentication controls using Microsoft **Azure** and implement **Salto Systems** for access control, enhancing security protocols and access management across campus facilities.

PROJECTS

ForEx Rates Predictor   GitHub
- Developed a **cloud-native** application for currency exchange rate prediction, real-time data integration, and containerization with **Docker** and **Kubernetes**, deployed on **Google Cloud** Platform
- Implemented a **microservices** architecture comprising **UI** container, **Gateway API** service to Frankfurter public API, Prediction service with **ML** models, and Data Storage, improving system scalability and manageability by **30%.**
- Employed and fine-tuned **LSTM neural networks** for predictive modeling, integrating real-time data sources to provide **9%** more accurate visual and actionable insights for traders and businesses

Food Pantry Scheduler [Open Source]   GitHub
- Spearheaded the development of a **Flask** app to serve **100%** of the administrative needs for Trinity College's food pantry, Food 'n Stuff, featuring secure login/register, session management, admin and volunteer dashboards
- Integrated **SQL databases** to store shifts posted by admins and hours logged by volunteers, ensuring reliable data management and retrieval across the web application
- Integrated email notifications for donation alerts using **Google's SMTP API** and utilized **GitHub** for version control, **CI/CD** pipelines, and issue tracking, ensuring robust collaboration and reducing deployment errors by **25%**

Personal Library Database   GitHub
- Developed a library service through Test Driven Development **(TDD)** with **CRUD** operations and a user-friendly UI/UX, built using **Java**, **Spring Boot**, HTML, JavaScript, and **Bulma CSS** framework
- Implemented a RESTful API, enabling functionalities like adding, viewing, and deleting books, with **H2 database** employed for data persistence and **JpaRepository** for data management, enhancing data retrieval speeds by 22%

EDUCATION

Trinity College, CT, USA   May 2026
B.S. in Computer Science & Economics
- Davis United World College Scholar
- Relevant Coursework: OOP **(Python, Java),** Data Structure & Algorithms **(Java)**, Software Design **(Spring Boot, REST APIs)**, Cloud Native Applications **(Docker, Kubernetes, GCP)**, Large Scale Development **(Git, Flask)**

CERTIFICATIONS
- **Kubernetes** Fundamentals with Interactive Labs -Oreilly
- **Spring Boot** for Beginners- AmigosCode

LEADERSHIP & VOLUNTEERING
- **Writing Associate**, Allan K. Smith Center for Writing and Rhetoric, Hartford, CT   August 2023 - Present
- **Resident Advisor/Assistant**, Trinity College, CT   August 2023 - May 2024
- **Senator**, Class of 2026, Student Government, Trinity College, CT   August 2022- May 2023

Interests: Languages (Polyglot), A Cappella, Game Dev., Clash of Code, Horseback Riding, Snorkeling, Cryptography