

Mehdi Bourahla

Machine Learning Engineer

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Education

M.S. in Computer Science, Artificial Intelligence

University of North Carolina at Charlotte

GPA: 3.75/4.0

August 2022 - December 2023

M.S. in Computer Science, Software Engineering

University of Blida

GPA: 3.5/4.0

September 2018 - September 2020

Work Experience

Research Assistant

University of North Carolina at Charlotte

November 2022 - PRESENT

Charlotte, NC, USA

- Developed and fine-tuned advanced machine learning algorithms, such as LSTM and Transformers, specifically for detecting social interactions via wearable technology in a significant NIH-funded project.
- Showcased deep expertise in Python, TensorFlow, and the YAMNet model to optimize the performance and accuracy of algorithms, achieving 84% accuracy.
- Efficiently managed data processing and model training using Bash scripts on computational clusters, enhancing project workflow and outcomes.

Lead Software Engineer

SIG-Service

April 2021 - May 2022

Algiers, Algeria

- Led the development of ERP systems for distribution companies using the Odoo framework and VueJS.
- Orchestrated a team of 3 developers (Backend, Frontend, UI/UX) and collaborated with the CTO in architectural design and implementation.
- Managed client interactions, including requirement analysis and training on new features, ensuring tailored solutions and customer satisfaction.

Machine Learning Engineer Intern

CERIST

September 2019 - September 2020

Algiers, Algeria

- Developed innovative gesture recognition solutions using Wi-Fi signal processing, applying Python, Keras, and deep learning models (CNN, LSTM, ConvLSTM).
- Conducted a comparative study of various frameworks and tools for system implementation, showcasing versatility in TensorFlow, PyTorch, and Scikit-Learn.
- Implemented and tuned deep learning models for a smart home environment, employing TensorFlow Serving for model deployment and Flask for application development.

Projects

SocialBit

Python, Tensorflow, AWS, LSTM, Transformers

Contributed to SocialBit, an ML model using audio for predicting social interactions in hospital settings. Enhanced YAMNet with LSTM and Transformers, achieving 84% accuracy in detecting social interactions, especially among stroke patients.

Electronic Speaker Detector

Python, Tensorflow, CNN, LSTM, Transformers

Developed an ML model to identify electronic media like TV/radio in environments, aiding voice assistant systems. Utilized advanced techniques including CNN, LSTM, and Transformers, achieving 88.47% accuracy. This project tackled the challenge of differentiating ambient sounds from electronic media in diverse real-world scenarios, employing various datasets for comprehensive evaluation and optimization.

Sign Language Recognition

Python, Tensorflow, CNN, LSTM, NLP, Flask

Developed an ML model for sign language recognition using Wi-Fi signal processing. Implemented two architectures: a word-based CNN-LSTM model and a sequence-based ConvLSTM model. Achieved effective gesture-to-action translation for smart home control, validated with the SignFi dataset.

Acile

TypeScript, Python, VueJS, Odoo, Firebase

Played a key role in developing Acile, an application using Odoo and VueJS for optimizing point of sale-supplier communications. Focused on automating inventory, purchase orders, and delivery schedules. Since launch, successfully scaled to over 10,000 users.

Skills

Programming Languages

Python, R, SQL, Java, C++, JavaScript.

Libraries & Frameworks

TensorFlow, Keras, PyTorch, Scikit-Learn, Pandas, Matplotlib, Seaborn, VueJS, NodeJS, Flask.

Machine Learning

CNN, RNN, GAN, LSTM, Autoencoders, Transformers, Transfer Learning, NLP, Ensemble Methods.

Others

Git, Docker, Kubernetes, Apache Spark, Hadoop, AWS (Lambda, EC2, Bucket S3), Firebase, CI/CD.

Certifications

AWS Cloud Technical Essentials

Introductory AWS certification covering core services, basic architecture, and cloud concepts.

Biomedical Research (IRB)

CITI Program's Biomedical Research (IRB) certification focuses on ethical research principles and IRB protocols.

Achievements

Fulbright Scholar

Awarded the prestigious Fulbright Scholarship for academic excellence and leadership potential in pursuing a Master's in Computer Science at UNC Charlotte.

CS Club President

Led the Computer Science Club as President, overseeing activities and growth of over 100 members, fostering a collaborative learning environment.

Featured at UNC Charlotte

Recognized in the UNC Charlotte Department of Computer Science news for building connections through technology.

Host of Newbiesoft Podcast

Hosted Newbiesoft, a podcast series focusing on tech insights and promoting tech startups.

Languages

English: TOEFL 88

French: TCF C2

German: Goethe Institut B1

Interest

Swimming Club Member, Triathlete, Content Creator, Aikido black belt, Podcasts, Mastering the art of cookies.