Hamza Zwairy

MSc in Computer Science and Engineering at MSU

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Summary

I am an AI enthusiast, developing both my academic and practical skills is equally important to me. Therefore, I am currently pursuing a Master's degree in Computer Science and Engineering at Michigan State University (under the sponsorship of Fulbright) while specializing in ML and AI. I want to also pursue a Ph.D. degree in the future, I am mainly interested in Machine Learning, Computer Vision, AI for Healthcare, Visual Language, Biometrics, and Deep Learning. I am open to any position after my M.S degree or during it (part-time).

Work Experience

Software Developer

06/2019 - 11/2019

Kensoftware

- Used React Native and React for mobile and web UI development.

Software Developer

11/2019 - 06/2021

Australian Post Global eCommerce solutions

Mainly used .NET with C# and Python to work with data:

- Building microservices for exchanging data within the company and its branches using Microsoft Azure functions with .NET C#.
- Integrating data processing and transmission components (APIs, webhooks, and SFTPs) to exchange data with external customers and carriers (like Amazon, DHL, and Asus), process incoming data, and map it to the internal domain models.
- Building thorough unit tests for all the components and microservices.
- Building Webscrapers that collect data and feed it to the system upon calls.
- Building components that process and manipulate data in CSV, XLSX, and XML files to build reports using Python libraries like Pandas and XML.
- Retrieving and saving data to a relational database using EF core.
- Worked with Azure DevOps services like pipelines to test and deploy with CI/CD and repos for versioning control across Dev, UAT, and production environments.

Education

Bachelor's degree in Computer Information Systems

2015 - 2019

University of Jordan

GPA 3.53

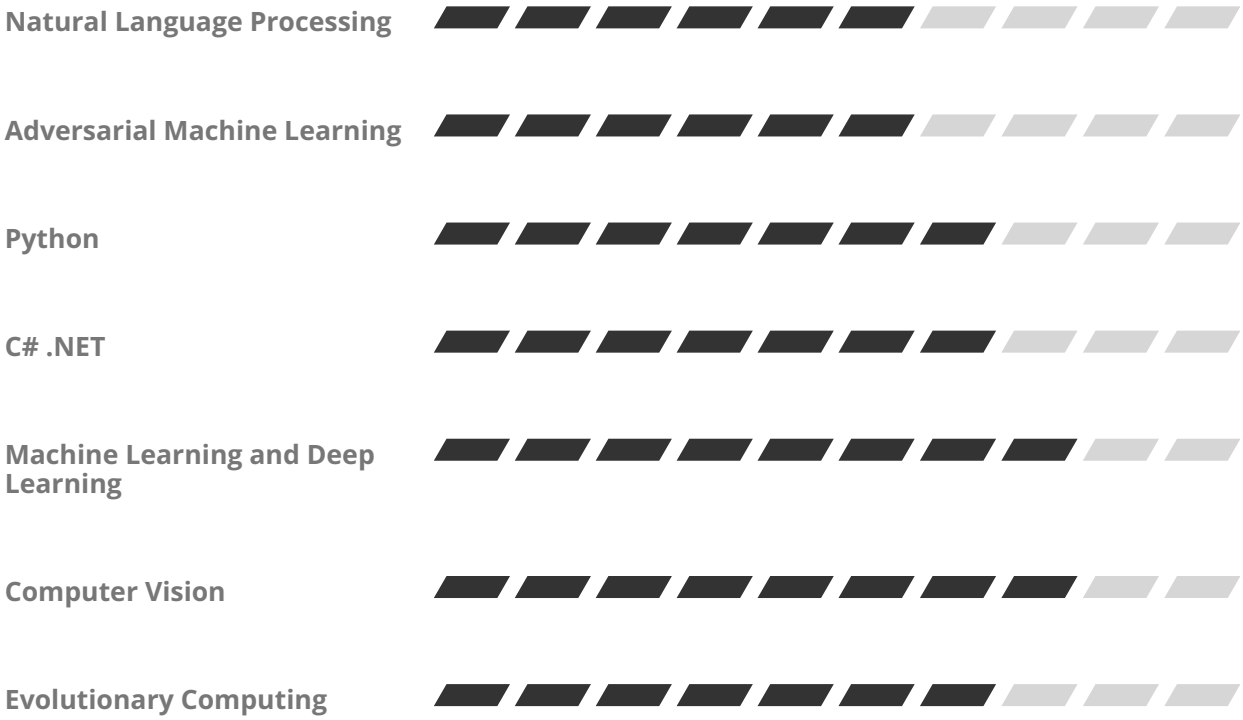
Master of Science (MS) in Computer Science and Engineering

2021 - expected: 2023

Michigan State University

Specialization in ML, current GPA 3.7.
Courses: Deep Learning, Evolutionary computing, Wireless networks, Adversarial Machine Learning, Natural Language Processing and Statistically Pattern Recognition and Analysis (Bayesian methods).

Skills



Machine Learning & Deep Learning skills

Theoretical understanding & hands-on experience:

- Supervised learning & unsupervised learning algorithms.
- Optimization and training algorithms: such as Gradient Descent, ADAM, SGD with momentum, RMSprop, Batch Normalization, Backpropagation, Transfer Learning, regularization, different activation and cost functions, Normalization, Dropout, Dimensionality Reduction, Feature Selection, etc.
- Fine-tuning the hyperparameters of the model to improve performance and debugging to find sources of errors or underperformance.
- Machine learning libraries: Mainly worked with PyTorch, Pandas, TensorFlow, Numpy, Scikit-learn, Keras, and Matplotlib.
- Different Neural Networks architectures like: DNNs, CNNs, GANs, and RNNs.
- Evolutionary Computing (Taught by Prof. Kalyanmoy Deb): Multi-Objective optimization, Genetic Algorithms, NSGA-II and Evolutionary Programming.
- Various adversarial Machine Learning black-box and white-box attacks.

Computer Vision skills

Theoretical knowledge & hands-on:

- Knowledge in CNNs models: Encoder-Decoder models, Classification models, Object Detection models, Segmentation models.
- Object detection: Yolov3 and MASK-RCNN.
- Content-based image retrieval: Using feature extraction from ResNet or MobileNet networks and cosine similarity metric between features.
- Image Captioning: CNN feature extractors and transformers.
- Image classification: Using different neural networks architectures such as GoogleNet, ResNet, DenseNet, etc.
- 3D semantic segmentation: Using the UNet architecture.

Natural Language Processing skills

Hands-on experience in:

- Part of Speech tagging.
- Document sentiment analysis.
- Named Entity Recognition.

Theoretical Knowledge:

- Main concepts of NLP such as Word embeddings, Transformers, LSTM, GRU, Skip-thought vectors, CLIP, BERT, Naïve Bayes, Markov chain, and Attention.

Certificates

A list of courses and certificates obtained can be found at my personal website: https://hamzehalzwairy.github.io/

Awards

- Fulbright Foreign Student Program Grantee, 2020-2021 Cycle: The Fulbright Student scholarships are offered every year to qualified Jordanian students for higher study and research in the United States of America. This award is highly competitive and only few students are accepted every year, more information at: https://www.fulbright-jordan.org/jordanian-programs/jordanian-student-scholarship