Aziz Al-Najjar

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Objective

As a skilled recent graduate with a Data Science Master's and a track record of successful projects in deep learning, AI, and NLP, I am seeking a challenging position in the field of artificial intelligence. Backed by a robust project management background and collaborative mindset, I'm dedicated to leveraging cutting-edge technologies, including AI and machine learning for innovative solutions to intricate challenges. I'm enthusiastic about joining an organization that shares my values and possesses a forward-looking vision.

Skills

- **Scientific/Research:** Python (PyTorch, TensorFlow, spaCy, Transformers, Open3D, Pandas, OpenCV, Scikit-Learn), MATLAB, R.
- **Programming and Database:** SQL, Python, R, C, C++, SystemVerilog, AVR, MIPS Assembly.
- **Data Analytics and Visualization:** R, Tableau, Power BI, Excel, Python (Seaborn, SciPy, Pandas, Matplotlib).
- **Soft Skills:** Research, Adaptability, Communication, Teamwork, Project Management, Analytical Thinking.
- **Languages:** Fluent in English and Arabic. Beginner in French and Turkish.

Education

Master of Engineering (MEng), Electrical and Computer Engineering, Specializing in Data Science **Jan 2022 – Jun 2023**
Carleton University, Ottawa, ON, Canada

- Data Science Specialization with the Supervision of Prof. Marzieh Amini and a 11.76 CGPA (3.92/4)
- Relevant Courses: Applied Deep Learning, Pattern Classification, Data Science, Simulation and Modeling, The Internet of Things, and Design of High-Performance Software.

Bachelor of Science (BSc), Electrical and Electronics Engineering **Feb 2017 – May 2021**
Middle East Technical University, Ankara, Turkey

- Specializing in Computer Architecture, Dean's Honor List, Scholarship Recipient.

Experience

Contract Research Assistant **Sep 2022 – Aug 2023**
Carleton University, Natural Resources of Canada (NRCan), Ottawa, ON, Canada

- Utilized Python and ArcGIS on high-performing computing Linux clusters to develop and optimize a deep learning algorithm to identify high-risk vegetation encroachment on powerlines using LiDAR data.
- Applied advanced data analysis techniques and analyzed 900-million-point clouds for model building and feature extraction.
- Collaborated closely with cross-functional teams to ensure the algorithm met project requirements and achieved optimal performance.

Teaching Assistant **Jan 2023 – Jun 2023**
Carleton University, Department of Information Technology, Ottawa, ON, Canada

- Assisted in the delivery of ITEC 5920 (Applied Deep Learning) and OSS 4009 (Computer Vision) courses at the master's level.
- Explained course materials on complex topics in Applied Deep Learning and Computer Vision, including Machine Learning techniques, NLPs, CNNs, RNNs, image segmentation, and object detection.
- Designed and led lab sessions and tutorials, evaluated coursework, and supported 30+ students in their Data Science-related projects.

Applied Projects

Identifying areas of high-risk vegetation encroachment on powerlines using LiDAR **Sep 2022 – Aug 2023**
Infrastructure Monitoring Lab, Carleton University, Ottawa, ON, Canada

- Collaborated with the National Resources of Canada to predict powerline failures via LiDAR data, driving the development of a deep learning-based solution for encroachment detection.
- Executed comprehensive data preprocessing and cleaning, and leveraged diverse technologies including Python (ArcGIS, Keras, PyTorch), C programming, and Cloud Compare.
- Implemented novel point-based encroachment detection algorithm; achieved a remarkable 98% precision in efficiently identifying encroachments across diverse datasets from Surrey, Toronto, and Ottawa.

Classifying Canadian Citizens' Financial Well-Being Status and Predicting the Impact of Global Shocks **Jan 2023 – Jun 2023**
Data Science Project, Carleton University, Ottawa, ON, Canada

- Developed an XGBoost-based machine-learning model in collaboration with the Financial Consumer Agency of Canada (FCAC) to classify Canadians' FWB using Python (Sci-Kit Learn, SciPy, Keras) and R.
- Analyzed annual financial survey data (2018-2022) to predict factors influencing FWB, when considering global events like COVID-19.
- Presented precise FWB driver predictions and policy recommendations, employing data visualization tools like Tableau for effective communication.

DeepEnsemble: A Novel Brain Wave Classification in MI-BCI using Ensemble of Deep Learners **Jan 2022 – Dec 2022**

Applied Deep Learning, Carleton University, Ottawa, ON, Canada

- Developed DeepEnsemble, an innovative deep learning-based solution, to classify EEG signals for right hand and right leg movements in a Brain-Computer Interface (BCI) system using Python (Keras, Jupyter Notebooks) and MATLAB.
- Integrated diverse Deep Learning models like Transformers, MLP, CNN, and Hybrid models through an ensemble approach for enhanced accuracy.
- Outperformed state-of-the-art methods, culminating in presentation and publication at the IEEE 41st International Conference on Consumer Electronics (2023 ICCE).

Machine vision-based control and warning system for autonomous cars. **Aug 2020 – July 2021**

Machine Vision, Middle East Technical University, Ankara, Turkey

- Engineered an innovative autonomous driving system by analyzing camera data, integrating image processing techniques for real-time car lane detection and tracking.
- Trained a YOLO-based object detection model using Python (OpenCV, Keras, Sci-Kit Learn) and C programming, enabling obstacle detection and control signal generation.
- Successfully tested the system on an RC car, validating its robustness for both Raspberry Pi and Arduino controllers, showcasing adaptability and real-world feasibility.

Certificates and Courses

- The Complete SQL Bootcamp: Go from Zero to Hero - Udemy 2023
- SQL for Data Analysis - Linked in Learning 2023
- Natural Language Processing: NLP With Transformers in Python - Udemy 2023
- Generative AI, from GANs to CLIP, with Python and PyTorch - Udemy 2023
- Cloud Essentials – AWS Training and Certification 2023
- Relational Databases Essential Training- Linked in Learning 2023
- Tableau and R for Analytics Projects - Linked in Learning 2022
- The Complete Self-Driving Car Course - Applied Deep Learning – Udemy 2021