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Jihan Ghanim

Machine Learning Engineer

SUMMARY

Dedicated Machine Learning Engineer with 3 years of research experience in data mining, natural language processing (NLP), reinforcement learning (RL), and time-series load forecasting projects. Developed an NLP-based dashboard for smart learning. Seeking a position to further advance AI skills and contribute to AI applications.

EDUCATION

M.E. in Machine Learning and Artificial Intelligence, Minor in Energy and Power Systems | 3.95/4 GPA — Sep '20 - Jan '23

American University of Beirut — Beirut, Lebanon

- Major Courses: Introduction to Machine Learning, Neural Networks, Topics in AI (RL), and Advanced Optimization Techniques
- Minor Courses: Environmental Aspects of Energy Systems and Energy Storage and Sustainable Systems

B.E. in Power and Machines (ABET Accreditation) | 3.58/4 GPA — Sep '15 - Jun '20

Beirut Arab University — Debbieh, Lebanon

- Final Year Project: Automated Hydroponics System using PLC
- Relevant Courses: Power System Planning, Power System Automation, and Electric Design

M.E. in Machine Learning and Artificial Intelligence, Minor in Energy and Power Systems | 3.95/4 GPA — Sep '20 - Jan '23

American University of Beirut — Beirut, Lebanon

- Major Courses: Introduction to Machine Learning, Neural Networks, Topics in AI (RL), and Advanced Optimization Techniques
- Minor Courses: Environmental Aspects of Energy Systems and Energy Storage and Sustainable Systems

PROFESSIONAL EXPERIENCE

Data Science Researcher | Zayed University, UAE (Remote) — Jan '23 - Dec '23

Project funded by Mohammed Bin Rashid Smart Learning Program R&D Seed Fund 2022

- Built a dashboard for mapping university-acquired skills to industry-demanded skills to address the issue of skill gap
- Designed a web crawler to collect and store data from LinkedIn job postings and another crawler to gather data from course syllabi
- Researched and examined different NLP text extraction techniques
- Leveraged an NLP rule-based approach relying on a dictionary of skills and multiple semantic similarity techniques for precise skill extraction
- Created a dictionary of skills from trusted resources and reputable websites using GPT-3.5-Turbo text extraction module

Graduate Research Assistant | AUB Human and Machines Research Lab — Feb '21 - Jan '23

A Reinforcement Learning and Time Series Forest Based Model Selection for Unsupervised Anomaly Detection Techniques Using Time Series Electricity Consumption, Thesis

- Conducted a research on anomaly detection models and model selection techniques
- Designed a novel Deep Q-Network-based model selection for dynamically selecting the best anomaly detection model
- Investigated a variety of reward functions and examined different exploration rates on the proposed model selection
- Tested the proposed models selecting on multiple datasets having different anomaly types maintaining accurate results on all datasets

An Asymmetric Loss with Anomaly Detection LSTM Framework for Power Consumption Prediction (publication, IEEE Melecon Conference)

- Researched different AI techniques used for time-series load forecasting
- Developed a framework of LSTM models with various asymmetric loss functions to minimize underpredictions
- Implemented a clustering-based anomaly detection technique to remove data outliers prior to the models' training
- Evaluated the proposed approach on three datasets yielding high performance and effectively minimizing underpredictions

KEY TECHNICAL SKILLS

- **AI skills:** Data mining, data visualization, Machine Learning and Deep learning algorithms (SVM, regression, clustering, RNN, LSTM), RL algorithms (Q-learning, Policy Gradient Methods, Actor-Critic), NLP techniques (transformers, BERT, GPT, named entity recognition, sentiment analysis), anomaly

detection, model evaluation, hyperparameter tuning, and data visualization

- **Programing skills:** Python, R, scikit-learn, Keras, TensorFlow, and PyTorch

SOFT SKILLS

- Problem-solving, integrity, critical thinking, teamwork, collaboration, interpersonal and communication skills, and presentation skills

RELEVANT COURSE PROJECTS

Deep Multi-task Learning Approach for Bias Mitigation in Arabic Hate Speech Detection

- Conducted a research on bias mitigation approaches in NLP and hate speech detection techniques in the Arabic language
- Collaborated with a team to perform hate speech detection using deep learning (LSTM) and reduced identity bias using multitask learning
- Utilized eli5 explainable AI tool to explore the results of the proposed framework

Neural Machine Translation

- Performed data preprocessing on the dataset (English sentences)
- Implemented a sequence-to-sequence network to perform English-Arabic translation
- Evaluated the model using the Bilingual Evaluation Understudy Score (BLEU)

OTHER COURSE PROJECTS

- Automated Image Captioning, Arabic Song Conversion Using GANs and Transfer Learning, and Movie Recommendation System

LANGUAGES

- Proficient English and native Arabic

EXTRACURRICULAR ACHIEVEMENTS

- Engaged as a team member in the 2018 Hult Prize Competition, advancing to the finals stage. This experience notably augmented my prowess in teamwork dynamics and entrepreneurship acumen.