Siavash Barqi Janiar

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I am a **ML/AI developer** with strong programming skills for **12 years**. I have **7 years** of extensive experience working with ML tools, with a strong academic background, **5 publications**, and multiple awarded scholarships.

Experience

Machine Learning Researcher | York University — Sep. 2021 – Apr. 2023

- Proposed a **Transfer Learning** method based on **feature extraction** to predict jamming patterns in a communication network.
- Reduced the time complexity of the primary model by **x30**.
- Realized a comprehensive **XAI** method comprising **feature extraction**, **pattern recognition**, and **rule learning** for network security.
- Improved the **transparency** of the model compared to the benchmark explainable models **by 17%**, while having a **32% less error rate**.
- Introduced an evaluation environment comparing the performance of **RNN networks** utilizing **LSTM** layers, achieving a **13% higher throughput rate** than **CNN networks** while having **x1.2 fewer parameters**.
- Designed an **evolutionary calculation-based ML pipeline** to minimize the cost of charging **electric vehicles (EVs)** based on the electricity price of the city of Toronto as time-series input.
- Found an optimum solution decreasing the cost of charging EVs by **$11/month** on average.

Machine Learning Researcher | Amirkabir University — Apr. 2017 – Jun. 2021

- Realized an efficient **model-free reinforcement learning** MAC protocol for frequency resource allocation. Surpassed the benchmark protocol with nearly **60% better throughput**.
- Leveraged an **online actor-critic algorithm** for access problems in heterogeneous networks. Achieved **95% throughput** in the network marked as the **highest possible performance**.
- Optimized the resource allocation system in distributed computer networks with prioritized packets using ML/AI, which increased the throughput of the wireless system **by approximately 15%**.

ML Developer | The Institution of Information of Communications Technology (ICT) — Jun. 2019 – Jan. 2021

- Developed a **federated learning** algorithm decreasing the collision rate of the secondary users in a cognitive radio network by **24%**.
- Implemented a comprehensive simulation realizing WiFi-LTE coexistence with the help of an **AI-powered decision making model** in 5GHz unlicensed band.
- Introduced a **semi-supervised learning** algorithm enabling WiFi users achieve a minimum bit error rate while avoiding disturbing legacy systems.

Skills & abilities

- **Programming Languages:** Python, Cython, SQL, C/C++, C#, R, MATLAB, Java, Spark, Scala, JavaScript, CSS, HTML, PHP.
- **ML / DL Frameworks:** TensorFlow, Keras, PyTorch, Sci-Kit Learn, Pandas, OpenCV, Transformers (LLM models).
- **Cloud Tools:** AWS, Microsoft Azure, GCP, ETLs, ECS.
- **Others:** Vivado, Simulink, Quartus, ADS, MS Office, Wireshark, Cisco Packet Tracer, Git/Github, LaTeX, Power BI.

Education

York University, MS Electrical Engineering and Computer Science — **2023**
Field of Study: AI and Machine Learning — GPA: 3.8 / 4.0

Amirkabir University, BS Electrical Engineering — **2021**
Focus: Telecom Engineering, AI, and Machine Learning — GPA: 3.4 / 4.0

Relevant Courses: Deep Reinforcement Learning, Machine Learning Theory, Statistical Learning, Deep Neural Networks, Reinforcement Learning and Game Theory, Advanced SQL, Transformer Models and NLP