Mohammad Saghali

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Education

MSc Data Science and Engineering, Politecnico di Torino *Turin, Italy*
BSc in Computer Engineering - Software Engineering, Isfahan University of Technology *Isfahan, Iran*

Work Experience

R&D Applied AI Intern **Mar 2026 – Aug 2026**
Nokia Bell Labs, Espoo, Finland

- Developed a product-bound, full-stack ML Intrusion Detection System combining low-overhead PCAP preprocessing, temporal feature extraction, and payload analysis to facilitate real-time, cross-environment AI decision-making for high-throughput data streams.
- Co-authoring two upcoming publications on clustering techniques, including a journal article and an academic book chapter

R&D Applied AI Intern **Dec 2024 – Jun 2025**
Nokia Bell Labs, Massy, France

- Built a real-time visualization dashboard for AI decision support, showcasing the tool to stakeholders at the Bell Labs Centennial and various conferences.
- Co-developed ACENet, a novel unsupervised clustering and embedding method for adaptive anomaly detection and implemented DASNet, a novel defense architecture to detect adversarial attacks and enhance the robustness of AI-enabled network features.
- Co inventor on two Nokia patent applications; co authored a demo paper accepted at IFIP Networking 2025.

Research Assistant **Mar 2021 – May 2023**
Isfahan University of Technology

- Engineered a reinforcement learning-based neural network utilizing autonomous agent neurons to execute complex decision-making and classification tasks. Extended this foundational thesis research using Python, PyTorch, Scikit-Learn, NumPy, and Matplotlib, culminating in a recently submitted academic paper.

Front-End Developer **Sep 2021 – Dec 2021**
Saam Soft Webware, Tehran, Iran

- Developed web applications end to end with Angular, HTML5, CSS3, and TypeScript, collaborating with product teams using Git through the full development cycle.

Teaching Assistant **Sep 2019 – Jul 2022**
Isfahan University of Technology

- Led lab sessions and designed assessments for Database Laboratory (SQL Server), Programming Fundamentals (C/C++), and Operating System Principles.

Patents

- **NC340428** – ACENet: Adaptive Clustering and Embedding Network for Real Time Applications. Co Inventor. Filed by Nokia Bell Labs. (Decision: Network & Cloud Services Patent Board, Oct 2025)
- **NC338342** – DASNET: An AI Based Architecture to Protect Deep Learning Algorithms Against Adversarial Examples. Co Inventor. Filed by Nokia Bell Labs. (Decision: Network & Cloud Services Patent Board, Sept 2025)

Publication

- **Modular ML Based IDS: Layered Attack Detection via Header & Payload Analysis**. Demonstration of HADM, a modular ML based architecture for malicious network traffic detection. IFIP Networking 2025, Demo & Poster Track.
- **Cognitive Agent Neuron: Learning and Decision Making Inspired by Dopaminergic Neurons**. Proposed a framework modeling individual neurons as autonomous agents based on dopaminergic mechanisms for enhanced reinforcement learning. Submitted, Journal of Theoretical Biology.

Honors

- **Excellence Work Award** – recognized by supervisor at Nokia Bell Labs for outstanding contributions.
- **Erasmus+ Traineeship Grant (2025/2026)** – Politecnico di Torino grant funding the research internship.
- **Politecnico di Torino 'Tesi su Proposta' Scholarship (2024/2025)** – merit based funding for thesis research abroad.

Skills

Programming	Python, C, C++, SQL (MySQL, SQL Server)
Machine Learning & AI	PyTorch, Scikit-learn, XGBoost, NumPy, Pandas, LLMs, RAG, LoRA, Semantic Search, Deep NLP, Anomaly Detection, Reinforcement Learning
MLOps & Deployment	Docker, FastAPI, MLflow, Azure (Blob Storage, VMs, Container Apps), Spark, Hadoop, CI/CD (GitHub Actions), Evidently AI
Software & Systems	Git, Linux, RESTful APIs, Pytest, Real-Time Data Streaming
Analysis & Visualization	Plotly, Dash, Matplotlib, Adversarial Robustness Testing, Network Traffic Analysis