Baghdadi Mohammed Mouad

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Education

Higher National School of Computer Science (ESI ex INI), Algiers, Algeria
Engineering Degree in Intelligent Systems and Data Sep 2022 – Present
Focus: Computer Science, Machine Learning, Data Science, Data Analysis, Data Visualization, HPC, Data Structures, Mobile Development
Cumulative Grade: 12.34 / 20 (equivalent to approx. 3.1 / 4.0 GPA)

Higher School of Computer Science 08 May 1945, Sidi Bel Abbès, Algeria
Preparatory Classes for Engineering Schools Sep 2020 – Jun 2022
Focus: Mathematics, Physics, Computer Science, Algorithms, and Programming

Internship Experience

Machine Learning Intern — NYU Abu Dhabi, Remote Jun 2024 – Sep 2024
- Fine-tuned a tiny pre-trained language model for code clone detection using LoRA.
- Created a dataset by generating, transforming, and evaluating code snippet pairs.
- Achieved up to 97% accuracy using only a small number of trainable parameters.

Data Scientist Intern — The Sparks Foundation, Remote (Singapore) Sep 2023 – Oct 2023
- Participated in a rotational internship program focused on real-world data science projects.
- Designed and developed an interactive dashboard to visualize store sales performance.
- Defined and implemented key performance indicators (KPIs) to evaluate business metrics.

Projects

BddChat — RAG-based Natural Language Querying System Python, Transformers
- Developed a Retrieval-Augmented Generation (RAG) system that allows users to query a 150-page database manual in natural language.
- Integrated a large language model (LLM) with a passage retrieval pipeline to generate accurate, context-based responses.

Domino Reinforcement Learning Agent Python, PPO, Reinforcement Learning
- Designed and trained a reinforcement learning agent to play 1v1 domino using Proximal Policy Optimization (PPO).
- Integrated rule-based opponent modeling, reward shaping, and training curriculum for improved gameplay performance.

Bird Classification with XAI PyTorch, Flask, Transformers
- Developed a bird species classification system using the Swin Transformer architecture, achieving 89% accuracy on the NABirds dataset.
- Implemented intrinsic attention visualization from SwinSelfAttention layers across multiple depths, with heatmaps showing areas of focus during prediction.
- Created a responsive web application for image upload, real-time prediction, and audio integration for identified species.

Question Answering Model Python, Transformers
- Built a deep learning model capable of answering questions based on given context paragraphs.
- Extracts relevant answer spans using a contextual understanding of the input text.

AI Research Paper Classification Scikit-learn, NLP
- Created a machine learning model to classify AI research papers from arXiv into four categories based on abstracts.
- Improved research discoverability through efficient categorization of academic content.

Skills

Programming: Python, R, C++, Java, Bash
Libraries/Frameworks: PyTorch, TensorFlow Transformers, FastAPI, Flutter
Tools & Technologies: Git, Docker, MySQL, MongoDB, Oracle, Pentaho, Tableau

Data Science: Data Analytics, Data Visualization, Web Scraping
Machine Learning: Supervised/Unsupervised Learning, Deep Learning, Deep Reinforcement Learning, Computer Vision, LLMs
MLOps: Good understanding of model deployment, monitoring, and versioning
Soft Skills: Problem Solving, Teamwork, Flexibility, Adaptability
Languages: English (B2 — IELTS 6.5), French (C1 — TCF), Arabic (Native)

Certifications & Awards

- NVIDIA — Deep Learning Fundamentals
- DeepLearning.ai — Machine Learning/Deep Learning Specialization
- Google — Data Analytics Professional Certificate
- **Second Place**, DataHack organized by CSE (2024)
- **Second Place**, HAiCk organized by School of AI (2024)

Extracurricular Activities

Technical Team Member Sep 2022 – Present
School of AI Club — ESI Algiers
- Member of the first AI-focused student club in Algeria.
- Contributed to organizing workshops and the national "HAICK" machine learning hackathon.
- Helped develop machine learning systems for internal club projects.