Omar AbedelKader

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About Me

I am an AI researcher with extensive experience in artificial intelligence and software engineering.
I am currently pursuing a Ph.D. in Computer Science at the University of Lille.

Education

University of Lille *Villeneuve-d'Ascq, France*   *Oct. 2024 – Present*
Ph.D in Computer Science

University of Lorraine *Nancy, France*   *Sept. 2022 – Sept. 2024*
M.Sc. in Natural Language Processing

Lebanese University *Beirut, Lebanon*   *Sept. 2019 – July 2022*
B.Sc. in Data Science

Experience

AI Researcher   *Villeneuve d'Ascq, France*
INRIA   *Oct. 2024 – Oct. 2027*

- Improving code completion and generation using LLMs, specifically targeting the Pharo programming language, which has limited training data.
- Developing techniques for code completion, type inference, and deployment in Pharo's IDE, with a focus on runtime performance.

AI Engineer   *Ver.-en-Halatte, France*
INERIS   *Sept. 2023 – Sept. 2024*

- Developing "INERIS-IA," a tool to classify textual documents based on INERIS's strategic goals using ML and NLP techniques
- Creating boolean queries for document retrieval, and improve corpus quality through document similarity and keyword extraction.

Intern - AI Researcher   *Villetaneuse, France*
LIPN   *June 2023 – Aug. 2023*

- Comparison of various sampling techniques for probabilistic planning, particularly in generating literary narratives.
- Evaluate different methods, including the Score Function Estimator (SFE) and more advanced techniques like Gumbel-Softmax, to assess their effectiveness in creating coherent and creative stories.

Software

ChatPharo

- ChatPharo is an intelligent conversational assistant integrated into the Pharo IDE. It allows developers to interact with their environment using natural language. More than just a chat interface, ChatPharo can dynamically query and execute information in the development environment, leveraging system tools and AI to assist and accelerate software development in Pharo..
- **GitHub Repository**: [GitHub ↗]

Pharo-Copilot

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Awards and Honors

Best Paper Award (3rd place), IWST 2025, Gdańsk, Poland
"Package-Aware Approach for Repository-Level Code Completion in Pharo"

Talks

ChatPharo: An Open Architecture for Understanding How to Talk Live to LLMs, ESUG 2025
Presentation: Slides ↗
Video: *Coming soon*

Mentorship

Google Summer of Code (GSoC), Mentor
Project Link ↗

Librbary

Neural Networks

Technologies & Skills

Programming Languages: Python, Pharo, Java, R, JavaScript, PHP, MySQL

Machine Learning & Deep Learning: TensorFlow, PyTorch, Keras, Scikit-learn

Natural Language Processing (NLP): SpaCy, NLTK

Big Data & Distributed Systems: Apache Spark, Hadoop

Data Analysis & Visualization: Pandas, Matplotlib, Seaborn

Scientific Computing: NumPy, SciPy

Web Development: Flask, Django, Laravel, ReactJS

Databases & Cloud: MongoDB, MySQL, AWS

Operating Systems: macOS, UNIX, Windows

Research Areas: Artificial Intelligence, Software Engineering

Visibility & Testimonials

Alumni Testimonial — IDMC, University of Lorraine: Featured on the official website of the IDMC Institute ↗ as an alumni in Natural Language Processing and Artificial Intelligence, sharing my academic and professional journey from MSc to PhD.

Volunteering

NeuroTech-Lille: President

Ministère de la Transition Écologique: Contributor in Club IA et Transition écologique

Conseil National du Numérique (CNNum): Contributor in Café IA

Croix-Rouge Française: Volunteer First Aider

Hobbies

Water Activities: Swimming · Diving

Outdoor and Adventure Sports: Hiking · Skiing · Skydiving

Creative and Artistic Activities: Photography

Precision Sports: Boxing · Bowling · Golf

Language

French: Native

English: B2