Mohamed Amine Layachi

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Research Interests

Machine Learning, Natural Language Processing, Computer Vision

Education

	Master of Science in Artificial Intelligence & Virtual Reality	
Period	**September 2022 — Ongoing**	
GPA	**3.78/4.0**	
University	**Ibn Tofail University**	Kenitra, Morocco

	Bachelor's Degree in Mathematics and Computer Science	
Period	**September 2019 — June 2022**	
GPA	**3.38/4.0**	
University	**Ibn Tofail University**	Kenitra, Morocco

Research Experience

	Research Intern
Supervised by	**Khaoula Boukir - PhD**
Period	**July 2023 — January 2024**

It's a research project, in which we've designed AI algorithms and techniques that will be used for an AI-based deductive verification system. We presented the project to a group of experts from the French Alternative Energies and Atomic Energy Commission (CEA List), receiving positive feedback on our approach.

Projects

Project	**EDRISI**	January 2024

Worked in a team of four to develop an AI-based traffic management system. I was responsible for all the research that was innovated for the project, one of which is a mathematical formula (SCROT - Segment Crossing Time) that the system uses to estimate the speed of vehicles, which has incorporated some aspects of Wave Equations and Chaos Theory.

Project	**NORTH**	November 2023

I collaborated with my colleague to create a multi-modal classifier specializing in dialectal variances. This classifier categorizes sentences written in North African dialects, assigning them to their respective countries. It incorporates a hybrid approach, leveraging deep learning architectures like Transformer Models, and classic probabilistic machine learning algorithms such as Naive Bayes.

PROJECT	**Theia**	Ongoing

Currently in development, Theia is an API designed to facilitate the retrieval of textual data from sources such as videos. This API integrates custom algorithms aimed at enhancing performance and expediting processing.

PROJECT	**ThreeCast**	Ongoing

Collaborated in a three-person team to design and implement a machine learning architecture capable of predicting stock prices by analyzing the dynamic nature of social media.

PROJECT	**MIMIR: A Speaker Recognition Model**	June 2023

Collaborated in a three-person team to create a speaker recognition model aimed at predicting the identity of the speaker.

LEADERSHIP

PRAGNOMOS

POSITION **Co-founder, Vice President**

PERIOD **November 2022 — Ongoing**

PRAGNOMOS is a club dedicated to organizing AI-related events to help the general public know more about AI.

TALKS

Behind The Scenes: ChatGPT

DATE **December 18th 2023**

I delivered a theoretical talk titled "Behind The Scenes: ChatGPT," which was part of the AGORA Bootcamp that we, PRAGNOMOS, organized. In this talk, I guided participants through the inner workings of Large Language Models, from the very foundations of neural networks to the attention mechanism and transformer models.

SKILLS / HOBBIES

Programming Languages	Python, C/C++, C-Sharp
Tools	PyTorch, TensorFlow, Git, AWS, OpenCV, OpenMP
Game Development	Unity, Unreal Engine, OpenGL, SDL
GUI Programming	DearImgui, PyGui, Tkinter, Adobe Tools, Figma
Music	Guitarist, Producer
Languages	Arabic, English (TOEFL iBT 93), French