

# Marwan Mashra

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Objective: Looking for a position as a Machine Learning Engineer/Data Scientist from September 2023

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## Professional Experience

Mars - Sep. 2023

**Deep Learning Engineer, Intern** Stellantis

Paris, France

- **Reduced by 74%** training time, while **increasing by 11%** the performance of state-of-the-art model DenseTNT.
- **Improving** an internally developed model PreTR, by adding multimodality, and allowing for a scene-aware backbone.
- **Adapted state-of-the-art** vehicles trajectory prediction models, Vecternet, DenseTNT, for pedestrian's trajectory prediction.
- Extracted map information of the Dataset ETH/UCY from raw images and converted it to a vector representation.

Feb. - Mars 2023

**Computer Vision Engineer, Freelance** Flagger

Paris, France

- **Reduced by 60%** inference time of the main vehicle detection algorithm, while **losing less than 4%** accuracy.
- **Automated the evaluation** of new models by creating a Benchmark pipeline.
- Implemented their first version of a night vehicle detection algorithm.

May - Aug. 2022

**Research Intern** CNRS

Paris, France

- **Designed a pipeline** allowing real-time AI content generation for Augmented Reality, by integrating state-of-the-art text-to-image diffusion models and AR motion tracking techniques.
- Investigated and **implemented state-of-the-art methods** for diffusion-based image generation, upscaling, and segmentation.

Nov. – Feb. 2022

**Research Student** University of Paris-Saclay

Paris, France

- **Launched**, under the supervision of **Isabelle Guyon**, the ML competition TRUSTAI on CodaLab.
- **Prepared the Dataset** used in the competition, building the preprocessing pipeline, and rigorously following strict guidelines.
- Explored and **reviewed more than 10 datasets**, diagnosing potential sources of discriminatory biases.
- Determined a bias evaluation metric, after inspecting the scientific literature on fairness in machine learning.

June - Aug. 2021

**Software Engineer Intern** LIRMM – Research Lab

Montpellier, France

- Led a team of 5 members as a Scrum master, following Agile software development practices and methodologies.
- Designed and built a cross-platform Vocal Assistant, using a microservices architecture with Python, Docker, and Flask.
- Delivered in less than 3 months a Raspberry Pi prototype, along with a design and technical documentation.

## Awards & Extra Activities

**1<sup>st</sup> Prize Hackathon**

Organized by **HEC & Institute Polytechnique & Irina** | Awarded by **TotalEnergies** (see [certificate](#))

Awarded among 16 teams for having the best performing AI model. The Hackathon focused on Computer Vision for sustainability.

**Excellence Scholarship** by Campus France

Selected among 500 students in my city for a 6-year merit scholarship, as part of an exchange program between Yemen and France.

**University Tutor**

University of Paris-Saclay

Nominated by the Head of Master to tutor first year AI master students.

**Student Delegate**

University of Montpellier

Elected for 2 years consecutive by the Head of the Computer Science Department to represent more than 100 students.

## Skills & Languages

<b>Soft Skills</b>	Leadership, Proactivity, Autonomy, Thirst for learning, Good programming & problem-solving skills, Good communication skills		
<b>Technical skills</b>	Areas of experience: Computer Vision, Transformers/Attention, Motion Forecasting, Image processing, Graph Neural Networks		
	Machine learning:	PyTorch, TensorFlow, OpenCV, Scikit-Learn	
	Programming:	Python, SQL/MySQL, C/C++, JavaScript	
	Tools :	Docker, Slurm, Apache Spark, Fast API, , Flask, MongoDB, Git	
<b>Languages</b>	<b>English</b> (Fluent)	<b>French</b> (Fluent)	

## Education

Sep. 2021 – Sep. 2023

**University of Paris Saclay**

Paris, France

MSc in Artificial intelligence | GPA: 4.0

Main Courses: ML Algorithms, Deep Learning, Computer Vision, Large-Scale Distributed Data Processing, Generative Models, applied statistics, Advanced Optimization, Signal Processing, NLP, Information Retrieval, Reinforcement Learning.

Sep. 2018 – Aug. 2021

**University of Montpellier**

Montpellier, France

BSc in Computer Science | GPA: 4.0

Main Courses: Algorithms & Data Structures, Project Management, System design, Object-oriented programming.