

# Ismail Labiad

X2020 | MVA

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## Professional Experiences

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2024	<b>Research Intern, Meta (FAIR team), Paris, 6 months</b>
Title	Fake detection and adversarial attacks on images
Description	Worked on adversarial attacks using gradient free black-box optimization and integration of their detection to detect fake images. <a href="#">paper</a>
Supervisor	Worked on applying new text watermarking approaches to images via quantization <a href="#">Olivier Teytaud</a>
2023	<b>Research Intern, INRIA (Magnet Team), Lille, 5 months</b>
Title	Fairness in fully decentralized federated learning
Description	Proposed a decentralized version of SearchFair and provided theoretical guarantees on the obtained level of fairness for the practical version of the algorithm. <a href="#">report</a>
Supervisors	<a href="#">Michael Perrot</a> and <a href="#">Batiste Le Bars</a>
2022	<b>Research Intern, ReciTAL, Paris, 3 months</b>
Description	Developing and analyzing the training of the latest NLP models on document processing.
Supervisor	<a href="#">Jacopo Staiano</a>
2021	<b>Software Engineer Intern, Freterium, 1 month</b>
Description	Developed an optimization algorithm for the 3D bin packing problem with additional constraints (rotations, weight limit and client-grouped products) and worked closely with the dev team to test it on a client dataset.

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## Education & Diplomas

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2023 - 2024	<b>Master 2, Mathematics, Vision, Learning (MVA), ENS Paris-Saclay</b> <i>Relevant courses:</i> 3D computer vision, Geometric data analysis, Generative models for images, Inverse problems and imagery: statistical and stochastic approaches, Algorithms for speech and NLP, Online algorithms, Convex optimization
2020 - 2024	<b>Engineering Degree, Diploma of École Polytechnique, Ecole Polytechnique</b> Applied Mathematics Major <i>Relevant courses:</i> Statistics, Fundamentals of CS, Operations research, Monte Carlo methods, Advanced algorithms, Robots and drones, Advanced ML and autonomous agents, Optimization, Regression and classification, 3D Computer Graphics

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## Academic Projects

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2023	<b>Research project, 3 months, Principal Component Analysis</b>
Description	The theoretical aspect of PCA (perturbation theory) and some of its applications:

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Supervisor	spectral clustering, image compression, anomaly detection. <a href="#">Karim Lounici</a>
2023 Description	<b>Snake Game</b> , group project, Reinforcement Learning Investigated the effect of state coding on the agent and proposed a trained agents that matches human performance on small boards. <a href="#">project report</a>
2022 Description	<b>Research project</b> , 3 months, Tropical Support Vector Machines Proof of the existence of an optimal margin separating tropical Halfspace/Hyperplane and development an algorithm to compute it.
Supervisors	<a href="#">Stéphane Gaubert</a> and <a href="#">Xavier Allamigeon</a>
2022 Description	<b>Group project</b> , Acoustic keyboard eavesdropping Reconstructing typed text from keyboard taps audio recording using AI and Hidden Markov models in collaboration with “Gendarmerie Nationale”.

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## Personal Projects

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2022 Description	<b>Chrome Dino</b> , Python Creating a Chrome Dino game copy and an RL agent capable of learning to play the game from visual inputs.
2021 Description	<b>Sarcastic headline classification</b> , Python Used GloVe word vector representation with LSTM layers to classify a dataset of news headlines.

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## Computer Skills

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Programming	Python, Java, C#, Dart, C/C++, R
Technologies	Flutter, Unity
Tools	SLURM, Git, LaTeX

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## Languages

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French	Fluent
English	Fluent
Arabic	Mother tongue
Spanish	Beginner

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## Other

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Software dev	Mobile/Web Apps, Games
Sport	Cross-training, Climbing