

# Ismail Labiad

X2020 | MVA

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## Education & Diplomas

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| 2023 - 2024 | <b>Master 2, Mathematics, Vision, Learning (MVA)</b> , ENS Paris-Saclay   |
| 2020 - 2024 | <b>Engineering Degree, Diploma of École Polytechnique</b> , Ecole Polytechnique<br>Applied Mathematics Major  |
| 2018 - 2020 | <b>CPGE, MPSI-MP*</b> , Lycée d'Excellence de Benguerir<br>Ranked 14 <sup>th</sup> on the national level in High-school Mathematical Olympiads (2018) |

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## Professional Experience

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| 2023<br>Title<br>Supervisors      | <b>Research Intern</b> , INRIA (Magnet Team), Lille, 5 months<br>Fairness in fully decentralized federated learning<br><a href="#">Michael Perrot</a> and <a href="#">Batiste Le Bars</a>  |
| 2022<br>Description<br>Supervisor | <b>Research Intern</b> , ReciTAL, Paris, 3 months<br>Developing and analyzing the training of the latest NLP models on document processing<br><a href="#">Jacopo Staiano</a>   |
| 2021<br>Description               | <b>Software Engineer Intern</b> , Freterium, 1 month<br>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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## Teaching

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| 2020 – 2021<br>Description | <b>Tutor</b> , Lycée Paul Eluard, 5 months<br>Helped high-school and undergraduate students in mathematics and physics by organizing small tutoring groups and adapting abstract concepts (as part of the human and military training program at Ecole Polytechnique) |
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## Academic Projects

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| 2023<br>Description<br>Supervisor | <b>Research project</b> , 3 months, Principal Component Analysis<br>The theoretical aspect of PCA (perturbation theory) and some of its applications: spectral clustering, image compression, anomaly detection<br><a href="#">Karim Lounici</a> |
| 2023<br>Description               | <b>Snake Game</b> , group project, Reinforcement Learning<br>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>                   |

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|---------------------|---|
| 2022<br>Description | <b>Research project</b> , 3 months, Tropical Support Vector Machines<br>Proof of the existence of an optimal margin separating tropical Halfspace/Hyperplane and development an algorithm to compute it |
| Supervisors         | <u>Stéphane Gaubert</u> and <u>Xavier Allamigeon</u>  |
| 2022<br>Description | <b>Group project</b> , Acoustic keyboard eavesdropping<br>Reconstructing typed text from keyboard taps audio recording using AI and Hidden Markov models in collaboration with “Gendarmerie Nationale”  |

## Personal Projects

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

## Computer Skills

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

## Languages

|         |               |
|---------|---------------|
| French  | Fluent        |
| English | Fluent        |
| Arabic  | Mother tongue |
| Spanish | Beginner      |

## Other

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