

# Reda Belhaj-Soullami

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## Education

### Ecole polytechnique

Paris

*"Ingénieur polytechnicien" diploma - Equivalent to a Master's degree*

2018-2022

Major in Applied mathematics. Relevant courses : advanced probability theory, statistics and statistical learning, Markov chains and Martingales, Machine Learning, Monte-Carlo simulation, Stochastic calculus for finance, optimization and control, Deep Learning for computer vision, programming, Design and analysis of algorithms, deep learning for computer vision, real analysis, functional analysis

### Lycée privé Sainte-Geneviève

Versailles

*Preparatory classes for french Grandes Ecoles*

2016-2018

Majors in Mathematics and Physics - Intensive preparation in pure science to competitive exams for entrance into the french Grandes Ecoles

## Work Experience

### Squarepoint Capital

London

*Quantitative research intern*

March 2021-August 2021

Research and implementation of strategies within the firm's automated trading framework. Analysis of large data sets using advanced statistical methods to identify trading opportunities.

### NukkAI

Paris

*Research engineer intern*

June 2020 - August 2020

Design of a deep multi-agent reinforcement learning algorithm for radar tracking. This work led to a publication of a paper at CAID (Conference for AI in Defense).

### Lycée privé Sainte-Geneviève

Versailles

*Oral Examiner*

September 2019 - June 2020

Providing 45 students in weekly mathematics oral examination, in preparation of the competitive exams for entrance into the french Grandes Ecoles.

### Fondation du lycée Louis-le-Grand

Paris

*Mission leader*

September 2018 - April 2019

Ecole polytechnique's leadership training : Tutor in charge of 25 students, (weekly mathematics and physics classes), in charge of various projects to promote excellence and social diversity in french "Grandes Ecoles" : development of the foundation website, organization of informational conferences, collaboration for the attribution of scholarships...

## Publications

Nouredine Nour, Reda Belhaj-Soullami, Cédric Buron, Alain Peres, and Frédéric Barbaresco. Multi-radar tracking optimization for collaborative combat, 2020.

## Academic Projects

*Note : Please consult my personal website for additional information about these projects : report, code...*

### Reinforcement learning for the game of Snake

*Research project*

September 2020 - December 2020

Design and implementation of a Reinforcement learning algorithm for the classic game of Snake

**EfficientNet for object detection***Research project**March 2020 – June 2020*

A computer vision project aiming to use the EfficientNet technique for the task of object detection.

**User Scheduling in 5G***Research project**January 2020*

A combinatorial optimization project, aiming to design optimal packet schedulers for allocating channels to users

**Prediction of probability of default (with BNP Paribas)***Collective Scientific Project at Ecole polytechnique**September 2019 – May 2020*

Machine learning and Deep Learning project (1 day a week) : identifying and implementing several learning techniques to enhance the estimation of the probability of default.

## Certifications

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**Coursera***Machine Learning certifications**July 2019*

Neural Networks and Deep Learning - Improving Deep Neural Networks : Hyperparameter tuning, Regularization and Optimization - Structuring Machine Learning Projects

## Languages

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**French** : Native**English** : Fluent (*TOEFL : 111/120*)**Spanish** : Intermediate.

## IT skills

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Python (including main ML/DL libraries), Java, SQL,  $\text{\LaTeX}$ .

## Activities and interests

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**Music**: Guitarist since I was 11 - Blues, Rock, Metal, Fusion    **Cinema, Gastronomy**