



MEHDI ZOUITINE

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ABOUT ME

Master student in Applied Mathematics. I am passionate about maths, computer science and machine learning, I am always in search of innovation and new challenges.
I'm looking for ambitious and challenging projects.

—**Long-term goal** : Get a thesis in machine learning or applied maths and then work in AI.

EDUCATION



MSc 2. **Statistics and Econometrics**, Toulouse School of Economics (TSE) (2020-2021)

- Statistics/Programming/Machine learning/Deep learning/Data-mining/Maths for machine learning



MSc 1. **Applied Mathematics** Université Toulouse III Paul Sabatier (UPS) (2019-2020)

- Optimization/Image/Signal/Simulation/Probability/Statistics/Scientific computation/Programming



BSc. **Pure Mathematics** Université Toulouse III Paul Sabatier (UPS) (2016-2019)

- Analysis/Algebra/Theory of numbers/Topology/Probability/Calculus



BSc. **Computer Science** Université Toulouse III Paul Sabatier (UPS) (2016-2019)

- Theoretical computer science/Multithreading/System/OS/AI/Database/OOP/FP/Programming



Apprenticeship : Multi-agent reinforcement learning (MARL) [1 year] 2020 (IRT S-E): Aurora project ([link](#))

- Bibliography and state of the art.
- Study and implementation of Grid-Wise-Control for MARL problems.
- In progress ...



Internship : Deep learning on fly test data [3 months] 2020 (AIRBUS):

- Sensor value prediction using MLP and LSTM.
- Study the efficiency of Siamese networks for the detection of anomalies in time series.
- Communication and presentation of results to industry experts

SCIENTIFIC EXPERIENCES



- Side work : Deep learning Experimentation on **Pytorch** (LSTM,GRU,ANN,CNN,GAN,AE) [in progress]
- Project : Formal verification of deep neural network (**IRIT**) [4 months]
- Unofficial internship : Research in Mathematics and Computer Science (**IMT**) [3 months]



JOBS

- Worker in an aeronautical factory (**Mecaprotec Industries**)
- Employee in a retirement home (**Edenis**)
- Sales animator in virtual reality (**Elite Animation**)
- Maths teacher in a school support structure (**Groupe Capitole**)
- Private tutoring in mathematics (had more than 15 students)
- Agricultural work (Lafitte-Vigordane)



SKILLS

- **Mathematics** : Knowledge and solid experience in all areas of mathematics
- **Research**: Reading scientific papers
- **Programming**: Experienced in Python, C and decent level in Caml,Java,Bash,SQL,Latex,VHDL,C++
- **Data analysis**: Some knowledge I learned outside of class
- **Simulation**: Stochastic and deterministic simulation in Python
- **Image and signal processing**: Processing image and signal in C/Python
- **Statistics**: Collection, sampling, estimation, testing
- **Machine learning**: Classic machine learning algorithms
- **Deep learning**: Solid knowledge of the concepts and hands-on experience
- **Reinforcement learning** : RL, Deep RL, MARL (Theory and practice)
- **Framework**: PyTorch, FastAi, Sklearn, Creme, Keras, Gym
- Professional **English** and fluent **French**



COMPETITION/DISTINCTION

- Finalist** in the International Data Analysis Olympiad IDAO 2020 Russia ([link](#)) :
 - IDAO is an international competition of machine learning for researcher, engineer and students from all over the world
 - More than 2700 participants from 83 countries
 - 1 off-line phase and one on-site phase in Russia (We'll do everything we can to finish first !)
- 1st place** in the Continental hackathon 2019 ([link](#)) :
 - 2 days machine learning competitions to predict the energy consumption of an electric car.
 - Meeting with Continental's teams and presentation of our solution to Continental's leaders.
- Defi IA/Airbus competitions 2019-2020 ([link](#)):
 - 4 months machine learning competitions to detect anomalies in flight test data



REFERENCES

Fabrice Gamboa: Professor in Mathematics at the **University of Toulouse Paul Sabatier** and **ANITI** researcher at **IMT** (Toulouse institute of Mathematics) laboratory (fabrice.gamboa@math.univ-toulouse.fr).

Martin Strecker : Professor in computer science at the **University of Toulouse Paul Sabatier** and researcher at **IRIT** (Toulouse institute of computer science) laboratory (martin.strecker@irit.fr).