Mehdi Zouitine

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Updated on
2020-10-30

Education

MSc 2. Statistics – Toulouse School of Economics ***2020–2021***

Toulouse School of Economics

- Statistics
- Optimisation
- Machine learning and deep learning
- Graph theory
- Software engeneering

MSc 1. Applied Mathematics – Université Paul Sabatier ***2019–2020***

UNIVERSITÉ TOULOUSE III PAUL SABATIER

- Image and signal processing
- Optimisation
- Programming
- Probability
- Statistics
- Scientific calculation

BCs. Pure Mathematics – Université Paul Sabatier ***2016–2019***

UNIVERSITÉ TOULOUSE III PAUL SABATIER

- Topology
- Group Theory
- Calculus
- Linear algebra
- Probability
- Real and complex Analysis
- Differential equation

BCs. Computer science – Université Paul Sabatier ***2016–2019***

UNIVERSITÉ TOULOUSE III PAUL SABATIER

- Programming
- Data structure
- Parallel computing
- System
- Database
- OOP/FOP
- Graph theory

Work experience (4 previous positions)

IRT Saint Exupéry – Toulouse ***09/2020–10/2021***

IRT SAINT EXUPERY

- Research in Multi-agent Deep reinforcement learning
- Bibliography and state of the art
- Implementation of reinforcement learning algorithm : PPO, A2C
- High Performance computing
- Implementation of gym multi-agent environnements

Airbus – Toulouse ***06/2020–09/2020***

— Deep learning on flight test data
— 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

IRIT – Toulouse ***02/2019–06/2019***

— Formal verification of deep neural network
— Study of a method based on lipishitz networks to ensure their robustness.
— Software development and testing in `Python`

IMT – Toulouse ***06/2019–09/2019***

— Problems of mathematic tessellation
— Initiation to research
— Reading scientific paper
— Software development and testing in `Python`

Sidework

Open source software

I develop various projects related to machine learning. In particular, I actively maintain gym-ma-toy, which is a Python library for Rl-environnement. I have also developed several deep learning architecture in Pytorch (LSTM,GAN, transformers)

Competitions

I participate in a lot of data science competitions. In particular the international olympiad which gathers students and PhD students from all over the world. I enjoy competitive data science and I find it to be a great way to sharpen my skills

Reading club

I am part of a community with which we share our knowledge around reading club. Topics range from pure math, optimization, deep learning and reinforcement learning

Skills

Programming	Very experienced in `Python`
Mathematics	Knowledge and solid experience in many areas of mathematics
Data analysis	Numerous case studies done during university projects, internships, and competitions
Image, signal	Solid theoretical knowledge in image and signal processing
ML, DL and RL	Solid knowledge of the concepts and hands-on experience (`Pytorch`)
Code quality	Healthy habits regarding coding conventions, documentation, and testing
Writing/reading	Keen interest in making documentation and writing blog posts. Reader scientific paper
Languages	Fluent French. Professionnal english

Distinctions

Finalist of the International Data Analysis Olympiads (IDAO) ***2020***

1st place in the Continental hackathon 2019 ***2019***

Reference

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).

Hobbies

— Teaching
— Boxing
— Cooking
— Reading
— Programming
— Maths