

Mohamed Ouaguenouni

✉ ouaguenouni.hachemi@gmail.com

48 Rue du Landy, Saint Ouen, 93400, 06.25.77.81.95.

🌐 <https://gitlab.com/users/ouaguenouni.hachemi/projects>

🌐 <https://www.linkedin.com/in/ouaguenouni-med-81711419a/>



Professional Experience

- June – September 2025 📌 **Research collaboration at the National Institute of Informatics (Tokyo, Japan).** Studying the use of Fourier series to derive efficiency bounds for approximate learning algorithms.
- September 2024 – August 2025 📌 **Temporary Teaching and Research Assistant, Sorbonne University.** Conducted tutorial sessions and supervised hands-on practical workshops; designed course projects and mentored students on various assignments.
- February – August 2021 📌 **Intern, Dassault Systèmes.** Optimized and fairly allocated hospital resources using operations-research techniques.
- August – September 2020 📌 **Research Intern, Panthéon-Assas University.** Carried out a preliminary study on classifying legal documents via machine-learning methods.
- February – August 2019 📌 **Research Intern, USTHB (University of Science and Technology Houari Boumediene).** Developed a hyper-heuristic framework for feature-selection problems.




Education

- 2021-2025 📌 **PhD in Artificial Intelligence and Decision Theory**, Sorbonne University.
- 2019-2021 📌 **Master's in Distributed Agents, Operations Research, Robotic Interaction and Decision-Making**, Sorbonne University.
- 2016-2019 📌 **Bachelor of Science in Computer Science**, USTHB (Ranked top of the class).




Scientific Publications

- 1 Gilbert, H., Ouaguenouni, M., Öztürk, M., & Spanjaard, O. (2025). Robust ordinal regression for subsets comparisons with interactions. *Eur. J. Oper. Res.*, 320(1), 146–159.
🔗 <https://doi.org/10.1016/J.EJOR.2024.07.021>
- 2 Gilbert, H., Ouaguenouni, M., Öztürk, M., & Spanjaard, O. (2024). Learning and optimizing with an ssb representation of intransitive preferences on sets. *ECAI 2024 - 26th European Conference on Artificial Intelligence*.
- 3 Gilbert, H., Ouaguenouni, M., Öztürk, M., & Spanjaard, O. (2023a). A hybrid approach to preference learning with interaction terms. *ECAI 2023 - 26th European Conference on Artificial Intelligence*.
- 4 Gilbert, H., Ouaguenouni, M., Öztürk, M., & Spanjaard, O. (2023b). Robust ordinal regression for collaborative preference learning with opinion synergies. *Proceedings of the 2023 International Conference on Autonomous Agents and Multiagent Systems, AAMAS 2023, London, United Kingdom, 29 May 2023 - 2 June 2023*.




Teaching Experience

- Year 1  Introduction to Python, Introduction to Raspberry Pi, Data Science
- Year 2  Object-Oriented Programming, Data Structures
- Year 3  Algorithms II, Web Technologies







Designed Projects

-  **Blockchain-Based Electoral System** Designed a blockchain architecture applied to the electoral process.
-  **Git from Scratch** Implemented in C a version-control system inspired by Git.
-  **CPU Simulator** Developed an emulator executing simple assembly instructions.

Supervised Projects





-  **Preference Elicitation** Incremental extraction of user preferences for perfume compositions.
-  **Online Game Balancing** Used decision-support tools to balance an MMORPG.
-  **Genetic Painting Simulation** Developed an evolutionary algorithm to simulate a painting process.

Technical Skills





Solvers	 CPLEX, Gurobi, pyDCOP, pyCSP, POMDP-Toolbox
Data Science	 NumPy, pandas, TensorFlow, Keras, Scikit-Learn, Dash/Plotly, NLTK, Surprise
Production and DevOps	 Docker, Google Cloud Platform, OpenShift
Programming Languages	 Java, Python, C, Assembly, C++
Databases	 SQL, RDF, OWL, XML, SPARQL, Apache Spark
Web Development	 HTML and CSS, JavaScript, Django, React, Gatsby.js, Angular, Node.js, MongoDB, Express

Miscellaneous

Popular Science Articles






-  **The Power of Democracy in Feature Selection**, Towards Data Science
-  **A Comprehensive Study of Mixed-Integer Programming with JuMP in Julia**, Towards Data Science
-  **Quality-Diversity Algorithms: A New Approach Based on MAP-Elites Applied to Robot Navigation**, Towards Data Science
-  **Towards a Unified Framework for Feature Selection with Ranking Functions**, Towards Data Science

Academic Projects




-  **Proof of Concept: Swarm Robotics as Programmable Matter**, C and Python
-  **Inventory Management Software**, Java, JavaFX, Oracle SQL
-  **Multi-Agent Exploration and Foraging**, Java, JADE, SPARQL, OWL
-  **Hyper-Heuristic Feature Selection Approach**, Python, NumPy, pandas, Scikit-Learn

Miscellaneous (continued)







Volunteer Activities

- 2021  **Workshop Instructor – Deep Learning with PyTorch**, Micro Club
- 2020  **Workshop Instructor – Evolutionary and Learning Algorithms**, Micro Club
-  **Workshop Instructor – Semantic Web**, USTHB
-  **Organizer – Local Hack Day**, Major League Hacking
- 2019  **General Secretary**, Micro Club

Languages, Sports and Hobbies

-  **Languages:** French, Arabic, English
-  **Sports:** Basketball, Rowing
-  **Hobbies:** Film, Video Games, History

Online Certifications

-  **Object-Oriented Data Structures in C++**, University of Illinois
-  **Machine Learning and Advanced Machine Learning**. Google Cloud, Pluralsight
-  **Machine Learning for Trading**. Google Cloud, New York Institute of Finance.
-  **Advanced Data Science** IBM.
-  **IBM Artificial Intelligence Engineering** IBM.
-  **Responsive Web Design**, freeCodeCamp