



Julien Soulé

3rd year PhD student
working in Multi-Agent
Systems for Cyberdefense



LCIS



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**Multi-Agent Reinforcement
Learning, Multi-Agent Systems, Autonomous
Intelligent Cyberdefense Agent, Assisted-Design**

EDUCATION

Grenoble Alpes University (UGA)

PhD - "On the Organization of a Cyberdefence Multi-Agent System"

JUL 2022 - PRESENT

- **Laboratoire de Conception Intégration des Systèmes (LCIS)**
- **Supervisors:** Jean-Paul Jamont (professor, UGA), Michel Occello (professor, UGA), Louis-Marie Traonouez (Thales La Ruche, Land Air Systems), Paul Théron (AICA IWG)
- **Keywords:** Multi-Agent Systems Organizations, Cyberdefense, Multi-Agent Reinforcement Learning, Software Architecture

Ecole de Technologie Supérieur, Montréal (Canada)

One study semester in Computer Engineering

JAN 2019 - MAY 2019

Institut National des Sciences Appliquées (INSA), Rennes

Master's degree in Computer Engineering

2015 - 2020

PROFESSIONAL EXPERIENCE

Thales (La Ruche), Rennes — Research Engineer

DEC 2021 - JUN 2022

- Study on multi-agent aspects and integration within *La Ruche (Thales, Land Air Systems)* context in order to explore modeling cyber environments and anomaly detections.

Atos, Toulouse — Software Engineer

AUG 2020 - SEP 2021

- Continuation of *ISIS* project developments with more interactions with the *CNES*.

Atos, Toulouse — Software Engineer Internship

JAN 2020 - JUL 2020

- Worked on development of the *ISIS* project for the *CNES (Centre National d'Etude Spatial)*.
- Product line to handle launching and monitoring of new satellites from *Control and Command* centers.
- **Tools:** Python / Bash, KVM, Grafana, Django...

SQLI, Toulouse — Mid Software Engineer Internship

MAY 2019 - JUL 2019

- *Airbus Helicopter* projects within different aspects: security, maintenance, development...

ADDITIONAL EXPERIENCES

BattleCode (Sopra Steria), Rennes

Meet several coding challenges in teams

MAR 2017

PROJECTS

[MOISE+MARL](#) — Academic Contribution

Created a Proof-Of-Concept framework designed to integrate organizational concepts such as roles, missions, and goals in MARL.

[CybMASDE](#) — Academic/Industrial Contribution

Created a Proof-Of-Concept research platform to develop Multi-Agent Systems combining MARL and organizational specifications.

COMMUNICATIONS

Journals

- Soulé, J., Jamont, J.-P., Occello, M., Traonouez, L.-M., & Théron, P. (2025). Assisting Multi-Agent System Design with MOISE+ and MARL : The MAMAD Method. In *Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)* (2025). Under revision.

International Conferences

- Soulé, J., Jamont, J.-P., Occello, M., Traonouez, L.-M., & Théron, P. (2025). Streamlining Resilient Kubernetes Autoscaling with Multi-Agent Systems via an Automated Online Design Framework. In *Proceedings of the 18th IEEE International Conference on Cloud Computing (CLOUD 2025)*, Helsinki, Finland, July 2025.
- Soulé, J., Jamont, J.-P., Occello, M., Traonouez, L.-M., & Théron, P. (2025). An Organizationally-Oriented Approach to Enhancing Explainability and Control in Multi-Agent Reinforcement Learning. In *Proceedings of the 24th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2025)*.
- Soulé, J., Jamont, J.-P., Occello, M., Théron, P., & Traonouez, L.-M. (2024). A MARL-based Approach for Easing MAS Organization Engineering. In *Proceedings of the 20th International Conference on Artificial Intelligence Applications and Innovations (AIAI 2024)*.
- Soulé, J., Jamont, J.-P., Occello, M., Théron, P., & Traonouez, L.-M. (2023). Towards a Multi-Agent Simulation of Cyber-Attackers and Cyber-Defenders Battles. In *Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics (SMC 2023)*.

National Conferences

- Soulé, J., Jamont, J.-P., Occello, M., Théron, P., & Traonouez, L.-M. (2024). Une approche organisationnelle pour améliorer l'explicabilité et le contrôle dans l'apprentissage par renforcement multi-agent. In *Proceedings of the Journées Francophones sur les Systèmes Multi-Agents (JFSMA 2025)*. (Best paper award)
- Soulé, J., Jamont, J.-P., Occello, M., Théron, P., & Traonouez, L.-M. (2024). Une Approche basée sur l'Apprentissage par Renforcement pour l'Ingénierie Organisationnelle d'un SMA. In *Proceedings of the Journées Francophones sur les Systèmes Multi-Agents (JFSMA 2024)*.
- Soulé, J., Jamont, J.-P., Occello, M., Théron, P., & Traonouez, L.-M. (2024). Un Outil pour la Conception de SMA par Apprentissage par Renforcement et Modélisation Organisationnelle. In *Proceedings of the Journées Francophones sur les Systèmes Multi-Agents (JFSMA 2024)*.
- Soulé, J., Jamont, J.-P., Occello, M., Théron, P., & Traonouez, L.-M. (2023). De l'Organisation des Systèmes Multi-Agents de Cyberdéfense. In *Proceedings of the Rencontres des Jeunes Chercheurs en Intelligence Artificielle (RJCIA 2023)*.
- Soulé, J., Jamont, J.-P., Occello, M., Théron, P., & Traonouez, L.-M. (2023). De l'Organisation des Systèmes Multi-Agents de Cyberdéfense. In *Proceedings of the Conférence sur la Recherche en Sécurité des Systèmes d'Information (RESSI 2023)*.

Poster Presentations

- Soulé, J., Jamont, J.-P., Occello, M., Théron, P., & Traonouez, L.-M. (2023). De l'Organisation des Systèmes Multi-Agents de Cyberdéfense. Poster presented at Journées Francophones sur les Systèmes Multi-Agents (JFSMA 2023).

Oral Presentations

- Talk for the **CybAIR NATO Chair**. École de l'air et de l'espace. MAR 2023
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RESPONSIBILITIES

Treasurer of the [Autonomous Intelligent Cyberdefence Agent International Work Group](#)

MAY 2023 - PRESENT

TEACHING EXPERIENCES

Teaching Assistant, Valence (*Engineering school and Technical Institute*)

SEPT 2024 - DEC 2024, JAN 2023 - APR 2023, SEPT 2025 - DEC 2025

- Supervised student teams on industry-driven projects in Cyberdefense
 - Tutorials and Labs in Basics of Operating Systems, Systems Programming/Administration, and Process Management
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SKILLS

French

- Native

English

- Professional (910 TOEIC)

Japanese

- Basic