Gauthier PICARD

Professor, PhD., Hab.
Senior Research Scientist in Artificial Intelligence

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Education

2014 **HDR in Computer Science**, *Université Jean Monnet*, Saint-Etienne, France
Dissertation on "Adaptive multiagent systems: engineering and problem solving"

2004 **PhD in Computer Science**, *Université Paul Sabatier*, Toulouse, France
Dissertation on "Multiagent-oriented methodology for self-organizing systems"

2001 **Master in Artificial Intelligence**, *Université Paul Sabatier*, Toulouse, France
Dissertation on "Cooperative self-organization for collective robotics"

2000 **Maîtrise in Computer Science**, *Université Paul Sabatier*, Toulouse, France

1999 **Licence (BSc) in Computer Science**, *Université Paul Sabatier*, Toulouse, France

1995 **Baccalauréat in Maths & Physics**, *Lycée Blaise Pascal*, Clermont-Fd, France

Experience

2020+ **Senior Research Scientist (Directeur de recherche)**, *ONERA*, Toulouse, France
Head of the Artificial Intelligence Laboratory

2018+ **Full Professor in Computer Science**, *Ecole des Mines*, Saint-Etienne, France
On secondment to ONERA since 2020

2007–2018 **Associate Professor in Computer Science**, *Ecole des Mines*, Saint-Etienne, France

2006–2007 **Research Engineer**, *IRIT, CNRS*, Toulouse, France

2004–2006 **Assistant Lecturer (ATER) in Computer Science**, *Université Paul Sabatier*, Toulouse, France

2011–2004 **Teaching Assistant (Moniteur) in Computer Science**, *Université Paul Sabatier*, Toulouse, France

Temporary

2021+ **Adjunct Instructor in Computer Science**, *ISAE-SUPAERO*, Toulouse, France

2021+ **Adjunct Instructor in Computer Science**, *Université Jean Jaurès*, Toulouse, France

2018–2020 **Visiting Researcher**, *IRIT, CNRS*, Toulouse, France

Associations

2024-2028 **Board Member**, *International Foundation for Autonomous Agents and Multi-Agent Systems (IFAAMAS)*

2018-2025 **Board Member**, *French Association for Artificial Intelligence (AFIA)*

Research Interests

- **Multi-agents systems**, and more specifically adaptive multi-agent systems (AMAS)
- **Distributed optimization** by cooperation between agents
- **Resource and task allocation**, to coordinate agents
- **Hybrid AI and Decision-focused Learning**, to adapt and learn heuristics, constraints and criteria
- **Self-organisation**, as a mechanism to design artificial systems
- Application to **collective robotics, space systems, UAVs**

Committees

Chair Program Chair (MASSpace'24, OptLearnMAS'21, JFSMA'18, SASO'16, AIPower'16, ESAW'09, ESAW'08), Tutorial Chair (PFIA'19), Workshop Chair (SASO'15), Doctoral Consortium Chair (SASO'14), Steering Committee (ESAW), Session Chair (IICAI'07, ROADEF'11), Demo Chair (WI-IAT'11), Organisation Chair (SASO'12)

Conferences AAMAS'24, ECAI'24, IJCAI'24, JFSMA'24, OptLearnMAS'24, PAAMS'24, OptLearnMAS'23, PAAMS'23, IJCAI'23, ECAI'23, JFSMA'23, AAMAS'23, AAMAS'23 Blue Sky Ideas, DARS'22, OptLearnMAS'22, ACSOS'22, EPIA'22, PAAMS'22, EXTRAAMAS'22, IJCAI-ECAI'22, The WebConf'22, AAMAS'22, AAAI'22, ACSOS'21, PAAMS'21, EXTRAAMAS'21, OptLearnMAS'21, AAMAS'21, IJCAI'21, AAAI'21, The WebConf'20, AAMAS'20, AAAI'20, ECAI'20, ICSOS'20, IJCAI'20, EPIA'19, PAAMS'19, EXTRAAMAS'19, CP'19, SASO'19, OPTMAS'19, JFSMA'19, AAMAS'19, AAAI'19, ICAART'19, IJCAI'19, AAMAS'18, AAAI'18, ICAART'18, WWW'18 Demo Track, SmartIoT@AAAI'18, AISGSB@AAAI'18, IJCAI-ECAI'18, ICCS'18, CP'18, OPTMAS'18, IJCAI'17, OPTMAS'17, SASO'17, JFSMA'17, PRIMA'17, SASO^ST'17, MAS&'16, IBERAMIA'16, OPTMAS'16, AAMAS'15, ISMIS'15, JFSMA'15, MAS&S'15, SASO'15, AHPC'14, AMSTA'14, AAMAS'14, MAS&S'14, ICRA'13, IJCAI'13, JFSMA'13, JFSMA'12, SASO'12, AOSE'12, MAS&S'12, PAAMS'12, AOSE'11, BADS'11, IDETC'11, IICAI'11, SASO'11, AAMAS'10, BADS'10, AOSE'10, SASO'10, WIVE'10, BADS'09, SARC'09, IICAI'09, IAMA'09, SASO'09 (posters), SARC'08, IICAI'07, RJCIA'07, EUMAS'05, ESAW'04, EUMAS'04

Journals AIJ, JAIR, AMAI, COIN, JAAMAS, Journal of Control, FGCS, IJAOSE, ACM TAAS, ROIA, SIMPAT, WIC, IJPR

Organization JFSMA'15, SASO'12, WI-IAT'11, EASSS'10, MALLOW'10, WI'09 Web Intelligence Summer School, ESAW'09, ESAW'08, JFSMA'07, ESAW'04

Supervision

Master 2 ongoing, 12 completed

PhD 6 ongoing, 7 completed

Post-docs 2 ongoing, 3 completed

PhD Jurys 30

PhD Reviews 17

Selected Publications

[1] Picard, Gauthier (2023). "Multi-Agent Consensus-based Bundle Allocation for Multi-Mode Composite Tasks". In: *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-23)*. IFAAMAS, pp. 504–512. doi: 10.5555/3545946.3598677. url: https://dl.acm.org/doi/10.5555/3545946.3598677. [AR=23%] [Core A* – Pre-proceedings – 1 review phase]

[2] — (2022a). "Auction-based and Distributed Optimization Approaches for Scheduling Observations in Satellite Constellations with Exclusive Orbit Portions". In: *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-22)*. IFAAMAS, pp. 1056–1064. doi: https://dl.acm.org/doi/10.5555/3535850.3535968. [AR=26%] [Core A* – Pre-proceedings – 1 review phase]

[3] — (2022b). "Trajectory Coordination based on Distributed Constraint Optimization Techniques in Unmanned Air Traffic Management". In: *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-22)*. IFAAMAS, pp. 1065–1073. doi: https://dl.acm.org/doi/10.5555/3535850.3535969. [AR=26%] [Core A* – Pre-proceedings – 1 review phase]

[4] Rust, Pierre, Picard, Gauthier, and Ramparany, Fano (2022). "Resilient Distributed Constraint Reasoning to Autonomously Configure and Adapt IoT Environments". In: *ACM Transactions on Internet Technology* 22.4, pp. 1–31. doi: http://dx.doi.org/10.1145/3507907. [Q1, IF=4.67]

[5] Pham Tran Anh, Quang, Singh, Kamal, Bradai, Abbas, Picard, Gauthier, and Riggio, Roberto (2019). "Adaptive Allocation Algorithms for Service Function Chains: Single and Multi-domain orchestration". In: *IEEE Transactions on Network and Service Management* 16.1, pp. 98–112. doi: 10.1109/TNSM.2018.2876623. url: https://ieeexplore.ieee.org/document/8494813. [Q1, IF=3.286]