Curriculum Vitæ

Gauthier PICARD

Senior Research Scientist, PhD, Hab.

Applied Artificial Intelligence and Distributed Optimization

Information processing and systems Department (DTIS)
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Education

2014	**Habilitation à diriger les recherches (HDR) in Computer Science** (UJM, France) — Adaptive multiagent systems: engineering and problem solving
2004	**PhD in Computer Science** (IRIT, Toulouse III, France) — Multiagent-oriented methodology
2001	**DEA in Artificial Intelligence** (equivalent to MSc) (IRIT, Toulouse III, France) — with honours (Ranking: 2nd), obtain PhD thesis funding on merit — Master thesis on collective robotics
2000	**Maîtrise et Licence in Computer Science** (equivalent to BSc) (Toulouse III, France) — with honours (first 5%), obtain Master thesis funding on merit
1998	**DEUG in Mathematics and Computer Science** (2-year university degree) (Pau, France)
1995	**Baccalauréat in Maths & Physics** (secondary school diploma) (Clermont-Fd, France)

Work Experience & Positions

from 2020	**Senior Research Scientist** at Intelligent Systems and Decision Unit (SYD), Information processing and systems Department (DTIS) of ONERA (Office national d'études et de recherches aérospatiales), Toulouse, France
from 2018	**Full Professor** (in long-term leave) at Computer Science and Intelligent Systems Department, Henri Fayol Institute of the École Nationale Supérieure des Mines de Saint-Etienne (ENSM.SE), France
2018-2020	**Visiting Researcher** at IRIT (Institute of Research in Computer Science of Toulouse), France
2015-2020	**Researcher** in the Multi-Agent and Services project, of the Connected Intelligence team, Laboratoire Hubert Curien UMR CNRS 5516, France — *Research topics*: Artificial intelligence, Multi-agent systems, self-organization, constraint satisfaction and optimization, smart grids, intelligent transport systems — *Research projects*: ANR ETHICAA, ITEA2 SEAS
2007-2018	**Associate Professor** (*Maître-Assistant des Ecoles des Mines*) at Computer Science and Intelligent Systems Department, Henri Fayol Institute of the École Nationale Supérieure des Mines de Saint-Etienne (ENSM.SE), France — *Educational topics*: Object-oriented programming with Java, Object-oriented Analysis and Design with UML, Artificial Intelligence, Logics — *Research topics*: Artificial intelligence, multi-agent systems, self-organization, constraint satisfaction and optimization, robotics, smart grids, intelligent transport systems — *Research projects*: ANR ETHICAA, ITEA2 SEAS, ANR ID4CS, CMIRA-RRA MAOP, ISLE-RRA WI — *Supervision*: 5 PhD students, 5 master students, 1 Postdoc student

2006-2007	**Research and european relations engineer** at IRIT (Institute of Research in Computer Science of Toulouse), France — *Responsabilities*: european projects arrangement & management, european relations — *Research topics*: Multi-agent systems, self-organization, constraint satisfaction and optimization, robotics
2004-2006	Attaché temporaire d'enseignement et recherche (equivalent to **assistant lecturer**) at the University Paul Sabatier of Toulouse, France — *Educational topics*: Multi-agent systems, parallelism (C, JAVA), operating systems (UNIX, Linux and Windows), software engineering (Rational Rose, Eclipse), imperative and functional programming (CAML), artificial intelligence (CAML) — *Research topics*: Multi-agent systems, self-organization, constraint satisfaction and optimization, robotics — Partnership with ONERA (G. Verfaillie) – co-supervision of MS Student on frequency assignment — *Research projects*: RNTL ADELFE — *Supervision*: 1 master student
2001-2004	Moniteur et Allocataire de Recherche (**PhD student** national funding due to merit) at the University Paul Sabatier of Toulouse, France — *Educational topics*: same as above — *Research topics*: Multi-agent systems, self-organization, agent-oriented software engineering — *Developments* and modelling: distributed time tabling solver (french national project ADELFE), collective robotics simulation platform, ADELFE platform, OpenTool enhancement to agent-oriented design — *Modelling* of an aeronautical mechanical design tool (european project SYNAMEC) — UML enhancement to multiagent-oriented design — *Partnership* with TNI-Valiosys

COURSE PROGRAMS

2021+	**Distributed Constraint Processing (8h)** (Master 2) https://www.gauthier-picard.info/files/lecture-DCSP-2021.pdf
2021+	**Linear Programming and Integer Linear Programming** (Licence 3, Master 1) https://www.isae-supaero.fr/en/
2021+	**Computational complexity (2h)** (Master 1) https://www.isae-supaero.fr/en/
2021+	**Optimization for Space System Design and Operations (20h)** (Master 1) https://www.isae-supaero.fr/en/
2019-2020	**Artificial Intelligence (160h)** (Master 1,2) http://www.emse.fr/~picard/cours/ai/
2017-2020	**Distributed and mobile computing (25h)** (Master 1,2)
2016-2020	**Master Program on Cyber-Physical and Social Systems (CPS2)** (Master 1,2) http://www.emse.fr/~picard/cours/cps2/
2016-2020	**Multi-Agent Coordination (25h)** (Master 1,2)
2016-2018	**Internet-of-Things 40h)** (Master 2) http://www.emse.fr/~picard/cours/iot/
2014-2018	**Artificial Intelligence (80h)** (Master 1) http://www.emse.fr/~picard/cours/ai/
Since 2014	**Introduction to Formal Logics** (Licence 3)
2014-2016	**Ambient Computing** (Master 2) http://www.emse.fr/~picard/cours/ac/
2010-2014	**Information System Development** (Master 1) http://www.emse.fr/~picard/cours/2A/devsi/
2008-2014	**Object-oriented Programming** (Licence 3) http://www.emse.fr/~picard/cours/1A/java/

2008-2014	**ICT Project Management** (Master 1) http://www.emse.fr/~picard/cours/2A/svn-trac/ http://www.emse.fr/~picard/cours/2A/gp/
2011-2012	**Introduction to Artificial Intelligence** (Licence 3) http://www.emse.fr/~picard/cours/1A/IA/

Professional Activities & Services

Publications	http://gauthier-picard.info/#publications
Supervision	1 ongoing PhD Student, 6 supervised and defended PhDs 7 supervised and defended Master students
Chair	Program Chair (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)
PC member	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, SASOˆST'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
Reviewer	Journal of Artificial Intelligence Research (JAIR), Annals of Mathematics and Artificial Intelligence (AMAI), Computational Intelligence (COIN), Autonomous Agents and Multi-Agent Systems Journal (JAAMAS), Journal of Control, Future Generation Computer Systems Journal (FGCS), International Journal of Agent-Oriented Software Engineering (IJAOSE), ACM Transactions on Autonomous and Adaptive Systems (TAAS), Revue d'Intelligence Artificielle (RIA), Simulation Modelling Practice and Theory Journal (SIMPAT), Web Intelligence An International Journal (WIC), International Journal of Production Research (IJPR), COIN@AAMAS'08, AAMAS'05, AAMAS'08, COIN@AAMAS'08, AOMP'08, APSLA'08, SBIA'08, RFIA'08, AOSE'09, ISA'09, ICRA'10, WI-IAT'11, AAAI'12
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

Research Projects

Domains: Artificial intelligence (multiagent systems, reasoning, self-organisation), distributed problem solving and optimization, multiagent engineering and programming
Applications: Ambient intelligence, internet of things, machine-to-machine, smart grids, multidisciplinary design, autonomous car fleets

2020	***HyperAgent*** [France-Switzerland ANR] The HyperAgents project aims to enable the deployment of world-wide hybrid communities of people and autonomous agents on the Web. — *Funding: 239k€* — *Consortium: Mines Saint-Etienne, INRIA, University of St Gallen* — *Role: expertise in Distributed AI and Multiagent Systems*

2016-2019 | ***Collectiveware*** [Spanish Ministerio de Economia y Competitividad]
This project targets novel technologies that empower human collectives to operate micro-grids to achieve sustainable energy management by supporting their self-awareness, cooperation, and self-governance.

— *Collaborator and funder: IIIA-CSIC*

2014-2017 | ***ETHICAA*** [French ANR]
The objectives of the eThicAa project is twofold: (i) definition of what should be a moral autonomous agent and a system of moral autonomous agents, and (ii) definition and resolution of ethical conflicts that could occur 1) inside one moral agent, 2) between one moral agent and the (moral) rules of the system it belongs to, 3) between one moral agent and a human operator or user, 4) between several artificial (moral) agents including or not human agents. Ethical conflicts are characterized by the fact that there is no "good" way to solve them. Nevertheless when a decision must be made it should be an informed decision based on an assessment of the arguments and values at stake. When several agents are involved this may result in one agent taking over the (decision or action) authority from the others.

— *Funding: 244 561 €*
— *Consortium: GREYC, Onera, LIP6, Télécom Ecole de Management, Ardans*
— *Model and implementation of collective ethical mechanisms*
— https://ethicaa.greyc.fr

2013-2015 | ***Smart Energy Aware Systems*** **(SEAS)** [European ITEA2]
The objective of the SEAS project is to enable interoperability of systems producing energy, ICT and automation systems in consumption sites. It also aims to introduce solutions based on dynamic technologies to control and track the estimated energy consumption. A second goal is to explore business models and solutions that allow energy market players to integrate microgrid metworks and reactive customers, in particular intelligent decentralized systems (application ambient intelligence and smart cities).

— *Funding: 89 493 €*
— *Cooperation between 6 countries (Finland, France, Portugal, Romania, Spain, Turkey)*
— *Ontology for Smart Grids ; privacy in Smart Grids ; automatic negotiation*
— http://www.itea2.org/project/index/view?project=10156

2010-2012 | ***Multi-Agent Oriented Programming*** **(MAOP)** (CMIRA-RRA funded project)
The objective of the project "Multi-Agent Oriented Programming" Project funded by the Région Rhône Alpes CMIRA 2010, is to work on Multi-Agent Oriented Programming as a paradigm for building complex software systems, in particular smart/intelligent decentralized systems.

— *Supervision of a Master Student from "Politehnica" University of Bucharest (ERASMUS)*
— *Cooperation with DEIS, Alma Mater Studiorum Universita di Bologna*
— *Ambient Intelligence scenario description and prototype*
— http://iscod.emse.fr/maop/

2009-2013 | ***ID4CS*** (ANR-funded French national project)
ID4CS is an ANR (French national research agency) funded project having the ambition to propose a modeling and simulation environment for designing complex systems such as aircrafts.

— *Co-supervision of PhD student with University of Florida (multi-disciplinary optimization)*
— *Cooperation with IRIT, Airbus, IMT, ICA, Upetec*
— *Coordinator of the agent modeling work package*
— http://www.irit.fr/id4cs

2008-2012 | ***Web Intelligence*** (ISLE Cluster-RRA funded project)
The overall objective is to consolidate and structure the scientific community in Rhône-Alpes and synergy of cooperation on the topic of Web Intelligence.

— *Participation to the "Future Web" work package*
— *Organisation and demo chair of WI-IAT 2011*
— http://www.web-intelligence-rhone-alpes.org/

2001-2004 | ***ADELFE*** (RNTL-funded French national project)
The aim of the ADELFE toolkit is to guide you during the development of adaptive multi-agent systems (AMAS). ADELFE is now a known agent-oriented methodology and has been published in two state-of-the-art books on agent-oriented software engineering.
— *ADELFE is one of the most renown agent-oriented methodology*
— *Development of AdelfeToolkit to help designers to follow the ADELFE process*
— http://www.irit.fr/ADELFE/

CONTRACTS

2010-2013 | Orange Labs
— *Funding: 24000€*
— *Contract within the SensCity FUI project*

2015-2018 | Orange Labs
— *Funding: 30000€*
— *Contract within the Open Home Infrastructure project*

2016 | Renault Innovations
— *Funding: 30000€*
— *Contract to develop taxi swarms*

COOPERATIONS

National | Université de Toulouse (IRIT, ICA, IMT), Université de Lille (LIFL), ENGIE, ONERA, Orange Labs, Upetec, Airbus, SNECMA

International | University of Florida (US), Universita di Bologna (IT), "Politehnica" University of Bucharest (RO), Federal University of Santa Catarina (BR), Artificial Intelligence Research Institute IIIA-CSIC (ES)

SUPERVISION

Defended PhD | P. RUST (PhD Orange Labs, 2015-2018): *"Spontaneous coordination of connected objects in the Internet of Things"*, supervised by G. Picard [50%] and F. Ramparany [50%]
S. GILLANI (PhD UJM, 2013-2016): *"Context-aware negotiation in a distributed environment of independent power prosumers"*, supervised by Prof. F. Laforest [50%], G. Picard [50%]
A. SORICI (Joint PhD UPB-EMSE, 2011-2015): *"Multi-Agent Context Management for Support of Ambient Computing Applications"*, supervised by Prof. A. Florea (UPB) [25%], Prof. O. Boissier [25%], G. Picard [50%]
C. PERSSON (PhD ANRT CIFRE Orange Labs/EMSE, 2009-2014): *"Agile governance in M2M networks"*, defended on 31 october 2014, supervised by Prof. O. Boissier [25%], G. Picard [45%], F. Ramparany [30%]
R. YAICH (PhD EMSE, 2009-2013): *"Adaptation and evolution of trust policies within virtual communities"*, defended on 29 october 2013, supervised by Prof. O. Boissier [25%], P. Jaillon [30%], G. Picard [45%]
D. VILLANUEVA (Joint PhD UF-EMSE, 2010-2013): *"Uncertainty propagation in multi-agent and multi-disciplinary optimisation"*, defended on 13 may 2013, supervised by DR CNRS R. Le Riche [33%], Prof. R. Haftka (UF) [33%], G. Picard [33%]

On-going PhD | A. DAOUD (PhD EMSE, 2018-2021): *"Decentralized On-Demand Resource Allocation for Autonomous Vehicle Fleets"*, supervised by G. Picard [33%], F. Balbo [33%] and P. Gianessi [33%]

Masters | L. CERQUEIRA MARTINS (Master EMSE/UJM, 2012): *"Decentralized stable matching in mixed communities"*
A. SORICI (Master Universitatea Politehnica Bucuresti, EURAMUS, 2011): *"Dynamic, reactive and pro-active context information aggregation in an AmI environment"*
M. BILAL (Master UTT, Orange Labs, 2011): *"Multi-agent governance model for M2M networks: Application to a smart parking management system"*

	S. Villarreal (Master EMSE/UJM, 2010): *"Distributed constraint-based Optimisation and Social Choice"* G. Clair (Master EMSE/UJM, 2008): *"Self-organisation for manufacturing control based on multi-agent systems"* E. Kaddoum (Master IRIT/UPS, 2008): *"Self-regulation for manufacturing control using self-organising MAS"* F. Cornet (Master IRIT/UPS, 2006): *"Study of a frequency assignment problem using adaptive multi-agent systems"*
Committees	T. Tucci (12/11/18), A. Rantrua (03/02/17), A. Damamme (12/12/16), F. Bistaffa (22/04/16), S. Gillani (04/10/16), A. Sorici (11/09/15), S. Esparcia García (24/02/15), C. Persson (31/10/14), L. Pons (07/07/14), R. Yaich (29/10/13), T. Jorquera (22/10/13), D. Villanueva (13/05/13), S. Rougemaille (27/10/08)
Reviewer	F. Cruz, Spain (16/10/18) ; M. Velay, France (25/09/18) ; J. Savaux, France (25/10/17) ; R. Breil, Fance (03/10/17) ; A. Rantrua, France (03/02/17); A. Dammame, France (12/12/16); Filippo Bistaffa, Italy (22/04/16); M. Pujol Gonzalez, Spain (25/11/14)

PUBLICATIONS