Hélène Fargier

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Short Bio

Senior full time researcher of the Centre National de la Recherche Scientifique (CNRS) since Oct 2008 (full time researcher at CNRS since Oct. 1996). I am working at the Artificial and Natural Intelligence Toulouse Institude (ANITI) annd at the Toulouse Research Institute in Computer Science (IRIT) in the Artificial Intelligence Department

Habilitation awarded October 2006, Université Paul Sabatier

Ph.D. student at IRIT and **teaching assistant** in computer science at the University of Toulouse (Nov. 91 - June 94). Awarded June 8, 1994.

Research engineer at the Alcatel Alsthom Research Laboratories, Oct. 88 - Sept 91. Study, specification and implementation of a second generation expert system in planning.

Research in Artificial Intelligence. More particularly:

Models for decision under uncertainty: decision theory (qualitative and quantitative approaches), multicriteria aggregation, uncertainty management, fuzzy sets and possibility theory. I am also interested in probabilistic approaches, bayesian nets, bayesian decision theory, markov decision processes, etc.

Algorithms for Artificial Intelligence: knowledge compilation, constraint satisfaction problems (CSPs), weighted and flexible CSPs, SAT, temporal reasoning, decision diagram. More generally, I am also interested in combinatorial optimization and complexity theory.

Applications in manufacturing: production control and planning, job-shop scheduling, product configuration, reactivity in production systems, risk assement. Collaboration with several companies: Cameleon Software, Renault, Airbus Defense and Space, CNES, IBM, etc.

Research Interests

Artificial Intelligence, Decision under uncertainty, Preference representation and learning, Knowledge Compilation, Applications of AI.

Current Research Programs

HOUSES: Harmonized Operation of Uncertainties in Spatialized Environmental Systems (ANR project)

PING/ACK: Preprocessing Information for Nontrivial Goals / Advanced Compilation of Knowledge (ANR project)

PER4MANCE: Planning and flexible work assignment to operators in aeronautic assembly lines: a systemic approach for addressing ergonomic and economic risks (ANR project)

CAASC: Cloud Adaptation for an Agile Supply Chain(ANR project)

Awards and Honors

I have been elected as "Eurai Fellow" (European Association for Artificial Intelligence) in 2014

I am associate editor of the journal *Artificial Intelligence* since 2015

Member of the Scientific Commitee of the MIA (Mathématiques et informatique appliquées) department of INRA (Institut National de la Recherche en Agronomie)

Editorial boards and Program Committees

Member or former member of the editorial board of the journals *Artificial Intelligence, Constraints*, *International Journal on Approximate Reasoning.*

Member of the program committees of several international workshops and conferences (AAAI, ECAI, IJCAI, KR, UAI, ECSQUARU) and reviewer for several international conferences and journals (ECAI, IJCAI, AAAI, KR, EJOR, JAIR, Artifical Intelligence, Fuzzy Sets and Systems, etc.).

International collaborative research projects (main ones)

Invited Reseacher at the Cork Constraint Computation Center (8 months)

Member of the ESPRIT Projets FUSION and DRUMS

List 5 key publications (in the last 3 years)

- Hélène Fargier, Paul Jourdan, Régis Sabbadin: A Path-following Polynomial Equations Systems Approach for Computing Nash Equilibria. AAMAS 2022: 418-426
- Hélène Fargier, Jérôme Mengin, Nicolas Schmidt: Nucleus-Satellites Systems of OMDDs for Reducing the Size of Compiled Forms. CP 2022: 23:1-23:18
- Hélène Fargier, Jérôme Mengin: A Knowledge Compilation Map for Conditional Preference Statements-based Languages. AAMAS 2021: 492-500
- Hélène Fargier, Romain Guillaume: Sequential decision making under ordinal uncertainty: A qualitative alternative to the Hurwicz criterion. Int. J. Approx. Reason. 116: 1-18 (2020)
- Nahla Ben Amor, Hélène Fargier, Régis Sabbadin, Meriem Trabelsi: Ordinal Polymatrix Games with Incomplete Information. KR 2020: 99-108

Scientific outputs (2019 to 2022)

- Number of publications in peer-reviewed international journals: 3
- Number of proceedings in peer-reviewed international conferences: 8

PhD supervisions or co-supervisions

- Defended 3
- On going 4