Valentin Montmirail

Ph.D in Artificial Intelligence

http://valentin.montmirail.com/
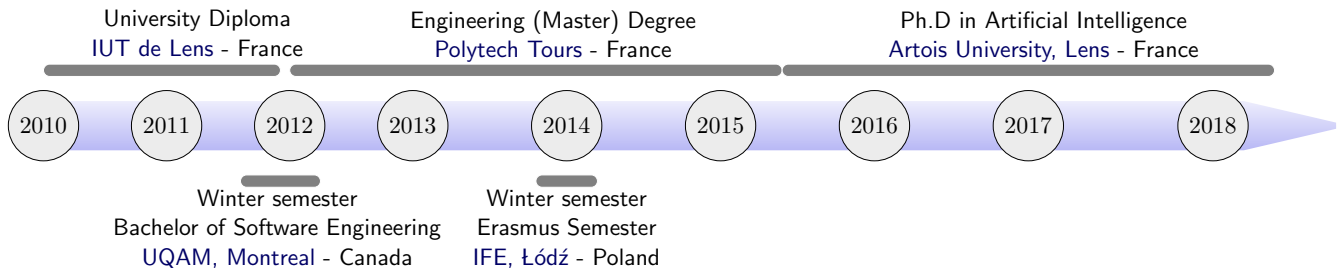
Nationality: French
Phone: +33 6 18 78 49 04
Birthday : 19 Sept 1991
valentin.montmirail@gmail.com

Education

University Diploma
IUT de Lens - France

2010   2011   2012   2013   2014   2015   2016   2017   2018

Engineering (Master) Degree
Polytech Tours - France

Ph.D in Artificial Intelligence
Artois University, Lens - France

Winter semester
Bachelor of Software Engineering
UQAM, Montreal - Canada

Winter semester
Erasmus Semester
IFE, Łódź - Poland

Professional Experiences

- **CRIL, Artois University**   Lens, France
  Ph.D Candidate in Artificial Intelligence (3 years)   *Oct. 2015 - Sept. 2018*
  - Ph.D Thesis under the supervison of Daniel Le Berre, co-supervised by Jean-Marie Lagniez and Tiago de Lima. We worked during these 3 years on how to solve efficiently in practice, modal logic satisfiability problems. Worth noticing that during these years we developped the framework RECAR.

- **Atos Wrocław**   Wrocław, Poland
  Java EE Developer (5 months)   *May 2015 - Sept. 2015*
  - My role as a Java EE Developer (with French knowledge) was to design and implement a software in Java technologies and work on projects with French-speaking clients.

- **Atos Worldline**   Tours, France
  JavaEE Developer (3 months)   *Aug. 2014 - Sept. 2014*
  - Perform the comparison and merging management projects prepaid accounts and receipts of items to achieve a complete software, generic and reusable.

- **Axa Assistance Canada**   Montreal, Canada
  PHP/Zend Developer (4 months $\wedge$ 3 months)   *June 2013 - Aug. 2013 $\wedge$ May 2012 - Aug. 2012*
  - Internship at AXA Assistance Canada, to create an internal website in PHP 5.3 and Zend Framework, the goal was the merger of several existing websites so that field agents no longer uses a single intranet to access everything they need.

- **C.H.R.U of Tours**   Tours, France
  Project Manager (4 months)   *Dec. 2014 - Mar. 2015*
  - The goal of this project was to realize a web platform who allow different hospitals to upload their DICOM files in an anonymous way. Theses DICOM files contains the patient's name. To fix this problem, we developed and integrated a JavaFX application to anonymize theses files.

- **ImmoJeune**   Paris, France
  PHP/Symfony 2 Developer (2 months)   *Aug. 2014 - Sept. 2014*
  - Performing an integratable Iframe on all partners of Immojeune. I co-managed the development in Symfony 2 and the versioning (git).

Publications with proceedings (author names are always in alphabetical order)

[Caridroit et al., 2017a] Caridroit, T., Lagniez, J.-M., Le Berre, D., de Lima, T., and Montmirail, V. (2017a). A SAT-based approach for solving the modal logic S5 satisfiability problem. In *Proceedings of the 31st AAAI Conference on Artificial Intelligence (AAAI 2017)*, pages 3864–3870.

[Caridroit et al., 2017b] Caridroit, T., Lagniez, J.-M., Le Berre, D., de Lima, T., and Montmirail, V. (2017b). Une approche basée sur SAT pour le problème de satisfiabilité en logique modale S5. In *Actes des 13es journées Francophones de Programmation par Contraintes (JFPC 2017)*, pages 45–53.

[Defourneau et al., 2017] Defourneau, T., Dewez, F., and Montmirail, V. (2017). Le Jeu du Lights Out : une approche visuelle des mathématiques au travers d'un atelier. *MathemaTICE: Volume 54*. (Online article).

[Dewez and Montmirail, 2017] Dewez, F. and Montmirail, V. (2017). The Hill Cipher: A Weakness Studied Through Group Action Theory. (Unpublished yet).

[Lagniez et al., 2016a] Lagniez, J. M., Le Berre, D., de Lima, T., and Montmirail, V. (2016a). On Checking Kripke Models for Modal Logic K. In *5th Workshop on Practical Aspects of Automated Reasoning (PAAR@IJCAR'16)*, pages 69–81.

[Lagniez et al., 2016b] Lagniez, J.-M., Le Berre, D., de Lima, T., and Montmirail, V. (2016b). À propos de la vérification de modèles en logique modale K. In *Actes des 10es Journées d'Intelligence Artificielle Fondamentale (JIAF'16)*, pages 149–157.

[Lagniez et al., 2017a] Lagniez, J.-M., Le Berre, D., de Lima, T., and Montmirail, V. (2017a). Un raccourci récursif pour CEGAR : Application au problème de satisfiabilité en logique modale K. In *Actes des 11es Journées d'Intelligence Artificielle Fondamentale (JIAF 2017)*, pages 169–176.

[Lagniez et al., 2017b] Lagniez, J.-M., Le Berre, D., de Lima, T., and Montmirail, V. (2017b). A Recursive Shortcut for CEGAR: Application To The Modal Logic K Satisfiability Problem. In *Proceedings of the 26th IJCAI International Joint Conference on Artificial Intelligence (IJCAI 2017)*, pages 674–680.

[Lagniez et al., 2018a] Lagniez, J. M., Le Berre, D., de Lima, T., and Montmirail, V. (2018a). An Assumption-Based Approach for Solving The Minimal S5-Satisfiability Problem. In *Proceedings of the 9th International Joint Conference on Automated Reasoning (IJCAR 2018)*, pages ?–?

[Lagniez et al., 2018b] Lagniez, J. M., Le Berre, D., de Lima, T., and Montmirail, V. (2018b). Une approche SAT incrémentale pour le problème de satisfiabilité minimale en logique modale S5. In *Actes des 14es journées Francophones de Programmation par Contraintes (JFPC 2018)*, pages ?–?

Presentations

- *R.E.C.A.R: Recursive Explore and Check Abstraction Refinement*
  - GT-RAP, Paris, France (Mar. 2018)
  - CRIL, Lens, France (Sept. 2017)
  - IJCAI, Melbourne, Australia (Aug. 2017)
  - JIAF, Caen, France (July 2017)
  - Polytech'Tours, Tours, France (July 2017)
  - INRIA Lille, Lille, France (June 2017)

- *A SAT-based approach for solving the modal logic S5 satisfiability problem*
    - JFPC, Montreuil, France (June 2017)
    - AAAI, San Francisco, USA (Feb. 2017)
- *On Checking Kripke Models for Modal Logic K*
    - PAAR, Coimbra, Portugal (July 2016)
    - JIAF, Montpellier, France (June 2016)

Participation in Summer Schools, Workshops and Conferences

- **IJCAR 2018** Oxford, United Kingdom
  International Joint Conference on Automated Reasoning *July 14-17, 2018*
- **JFPC 2018** Amiens, France
  Journes Francophones de Programmation par Contraintes *June 12-15, 2018*
- **IA^2 2017** Lyon, France
  Institut d'Automne en Intelligence Artificielle *Oct. 30 - 3 Nov., 2017*
- **ACPSS 2017** Porquerolles Island, France
  Joint ACP and GdR RO Summer School *Sept. 18-22, 2017*
- **SAT 2017** Melbourne, Australia
  International Conference on Applications of Satisfiability *Aug. 28 - 1 Sept., 2017*
- **IJCAI 2017** Melbourne, Australia
  International Joint Conference on Artificial Intelligence Conference *Aug. 19-25, 2017*
- **JIAF 2017** Caen, France
  Journes d'Intelligence Artificielle Fondamentale *July 3-7, 2017*
- **IEA/AIE 2017** Arras, France
  International Conference on Applied Intelligent Systems *June 27-30, 2017*
- **JFPC 2017** Montrueil sur Mer, France
  Journes Francophones de Programmation par Contraintes *June 13-15, 2017*
- **AAAI 2017** San Francisco, CA, USA
  Association for the Advancement of Artificial Intelligence Conference *Feb. 4-9, 2017*
- **IJCAR 2016** Coimbra, Portugal
  International Joint Conference on Automated Reasoning *June 27 - 2 July, 2016*
- **JIAF 2016** Montpellier, France
  Journes de l'Intelligence Artificielle Fondamentale *June 15-17, 2016*
- **ACAI'15@CRIL** Lille, France
  Advanced Course on AI *Oct. 26-30, 2015*

Awards, Grants & Honors

- **1st Innovation Price** Lille, France
  Doctoriales Haut-de-France *June 2017*
    - First place in the competition of Innovation on the theme of Mobility in a team of 8 members against 8 other teams. We created a fake company, shown that it was viable, and technologically innovative in 72 hours. This company was able to create and sell an unified subscription card (Ubicarte) for the National Transport in France.

Projects Developped/Contributed

- **SAT Live! website** — Jekyll, Markdown — *2017 - Current*
  Contributions to the SAT Live! website

- **AAR website** — Jekyll, Markdown — *2017 - Current*
  The website of the Assocation for Automated Reasoning

- **Personal Website** — MySQL, JavaEE — *2015 - Current*
  Online CV website to display my research and projects

- **CADE website** — Jekyll, Markdown — *2017 - Current*
  The website of the CADE Conference

- **IJCAR website** — Jekyll, Markdown — *2017 - Current*
  The website of the IJCAR Conference

- **MoSaiC solver** — C++ — *2017 - 2018*
  A modal logic K Satisfiability Solver using the RECAR framework

- **S52SAT solver** — C++ — *2016 - 2018*
  A modal logic S5 Satisfiability Solver able to give in output the S5-model

- **Planning to S5 Translator** — C++ — *2017 - 2018*
  Translator of PDDL instances into Modal Logic S5 formulae

- **MDK-Verifier** — C++ — *2016 - 2017*
  A checker of satisfiability of a Kripke model in modal logic K

- **Generalized Lights-Out** — Java — *2016 - 2017*
  Application to play at the Lights Out and test our method to solve the problem

Skills

- **Research:** Optimization, Artificial Intelligence, SAT/SMT Technology, Modal Logics, Constraint Programming, Monte Carlo Methods, Abstraction-based Approaches (CEGAR/RECAR)

- **Development:** C (GTK+, OpenGL, Glut), C++ (Qt 4.7+), Java(FX), JavaEE (Spring, JSF, Tapestry, CDI), PHP (Zend Framework, Symfony 2), JQuery, LaTeX, Jekyll, SQL, Python, Persistence (JPA, Hibernate)

- **Databases:** Microsoft Access, MySQL, PostGreSQL, Oracle

- **Dev/Ops:** Versioning (Git, SVN, Mercurial), Maven, ElasticSearch, Logstash, Kibana, SonarQube, Jenkins, JIRA, Docker, Agile Development (Scrum, Kanban, . . .), Test Driven Development (JUnit, CppCheck, PHPUnit)

- **Languages:** French (native), English (fluent), Italian (scholar), Polish (scholar)

- Discovering and implementing new ideas. Give me a context and a problem and I will figure it out.

- Diverse background in Mathematics and Computer Science and some work in the Popular Science allow me to communicate to a scientific or general audience and begin contributing to a group.