MOHAMED SIALA

PERSONAL INFORMATION

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Address	7, avenue du Colonel Roche, BP 54200
	31031 Toulouse cedex 4, France

RESEARCH INTERESTS

Algorithms, Combinatorial optimisation, Constraint Programming, Artificial Intelligence

WORK EXPERIENCE

2018 -present **Associate Professor** in Computer Science, INSA Toulouse, LAAS-CNRS, France

06/2015 - 09/2018 Post-Doctoral Researcher, Insight, Centre for Data Analytics, UCC, Ireland
Supervisor: Barry O'Sullivan

03/2015 - 06/2018 Research assistant, Insight, Centre for Data Analytics, UCC, Ireland
Supervisor: Barry O'Sullivan

2012 - 2014 Teaching assistant, INSA, Toulouse, France

2011 - 2014 PhD. Researcher, LAAS-CNRS, Toulouse, France
Funding : **CNRS, Google**, and Midi-Pyrénées region

EDUCATION

2011 – 2015 PhD in Computer Science, INSA Toulouse, LAAS-CNRS, France
Title: *Search, propagation, and learning in sequencing and scheduling problems*
Supervisors: Emmanuel Hebrard and Christian Artigues

2010 – 2012 Master degree in Artificial Intelligence and Decision, *ENSI, Tunisia*

2007 – 2010 Computer Engineering Diploma, *ENSI Tunisia*

2005 – 2007 Undergraduate degree in Mathematics and Physics, " Classes préparatoires ", *IPEIS, Sfax, Tunisia*

AWARDS & HONORS

2019 **IJCAI Distinguished Program Committee**

2016 **Runner up for the European Association for Artificial Intelligence Distinguished Dissertation Award**

2012 **Best paper award (honorable mention)** for the paper "An Optimal Arc Consistency Algorithm for a Chain of Atmost Constraints with Cardinality", CP 2012 Conference

Solver awards **Mistral-2.0, an open-source constraint programming library that won international solver competitions:**

- 2020: Two bronze medals in the Minizinc Challenge (free and parallel categories)
- 2017: Winner of the optimisation track in the XCSP3 competition

GRANTS

2019 - 2020 LAAS-CNRS, starting package, **€20k**

2019 INSA Toulouse, starting package, **€3k**

01/2013 Travel grant for visiting NICTA, Sydney, The "Systems" doctoral school, €1k

SERVICE

Senior Program Committee

IJCAI International Joint Conferences on Artificial Intelligence: since 2021

Program Committee

CP International Conference on Principles and Practice of Constraint Programming: since 2017

IJCAI International Joint Conferences on Artificial Intelligence: since 2019

AAAI AAAI Conference on Artificial Intelligence : since 2020

ECAI European Conference on Artificial Intelligence: 2016, 2018

JFPC Journées Francophones de Programmation par Contraintes: since 2015

Journals

Journal of Artificial Intelligence Research: since 2019

Constraints, since 2020

Artificial Intelligence, 2015

Invited Reviewer

International Colloquium on Automata, Languages and Programming (ICALP): 2019

International Conference on Principles and Practice of Constraint Programming (CP): 2013, 2014, 2015, 2016

International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR): 2014, 2016

AAAI Conference on Artificial Intelligence (AAAI): 2013, 2016, 2017, 2019

International Joint Conferences on Artificial Intelligence (IJCAI): 2016, 2017

Organisation Committee

2020 · **Co-organising & co-chairing the Master Class of the CPAIOR'20 Conference**, Vienna, Austria

2019 · Member of the organisation committee of JFPC'19 (the French constraint programming conference), Albi, France

Local Service

2019 - present · In charge of organising the ROC research group seminars

2016 - 2018 · In charge of organising the Insight Seminar Series

2012 - 2014 · The representative of PhD. students in the ROC research group

SUPERVISION

PhD.

2020-2023 · Co-supervising the PhD of Julien Ferry with Marie José Huguet and Sébastien Gambs:

Privacy, Interpretability, and Fairness in Machine Learning

2019-2022 · Co-supervising the PhD of Hao Hu with Marie José Huguet:

Declarative Machine Learning

2016-2019 · **[Graduated]** Co-supervising the PhD of Begum Genc with Barry O'Sullivan:

An Approach to Robustness in Stable Marriage and Stable Roommates Problems

B.S. & M.S.

05/2020 – 08/2020: Sabine Muzellec

03/2020 – 09/2020: Maxence Bieres

02/2019 – 07/2019: Hao Hu

04/2019 – 10/2019: Hosseim NAHAL

06/2019 – 09/2019: Julien Ferry

MISCELLANEOUS

Academic visits

02/2020 · Department of Philosophy, UCC, Cork, Ireland,

01/2013 · NICTA, UNSW, Sydney, Australia Cooperation with : Nina Narodytska and Toby Walsh

Research Projects participation

09/2019 - present · Collaborator of the ANITI research chair DeepLEVER

2017 - 2018 · UTRC-UCC Cooperation Project

2015 - 2018 · **Science Foundation Ireland**, Grants 12/RC/2289 and 16/RC/3918, co-funded under the European Regional Development Fund

2012 - 2014 · **CNRS, Google**, and Midi-Pyrénées region Grant: Conflict Directed Scheduling

Popularization

2013 · The art of "decision making", Science Festival in Toulouse

PUBLICATIONS

2022

AAAI 2022 — Hao Hu, Marie-José Huguet, and Mohamed Siala. Optimizing binary decision diagrams with maxsat for classification. In *Thirty-Sixth AAAI Conference on Artificial Intelligence, **AAAI'22** 2022, 22 February 2022, Vancouver BC, Canada*, 2021

2021

CIKM 2021 — Ulrich Aïvodji, Julien Ferry, Sébastien Gambs, Marie-José Huguet, and Mohamed Siala. Faircorels, an open-source library for learning fair rule lists. In *30th ACM International Conference on Information and Knowledge Management, **CIKM** 2021, 1-5 November 2021, Gold Coast, Queensland, Australia*, 2021

2020

IJCAI 2020 — Hao Hu, Mohamed Siala, Emmanuel Hebrard, and Marie-José Huguet. Learning optimal decision trees with maxsat and its integration in adaboost. In *Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence, **IJCAI** 2020*, pages 1170–1176, 2020

CP 2020 — Alexey Ignatiev, Martin C. Cooper, Mohamed Siala, Emmanuel Hebrard, and João Marques-Silva. Towards formal fairness in machine learning. In *Principles and Practice of Constraint Programming - 26th International Conference, **CP** 2020, Louvain-la-Neuve, Belgium, September 7-11, 2020, Proceedings*, pages 846–867, 2020

JAIT 2020 — Mark Antunes, Vincent Armant, Kenneth N. Brown, Daniel A. Desmond, Guillaume Escamocher, Anne-Marie George, Diarmuid Grimes, Mike O'Keeffe, Yiqing Lin, Barry O'Sullivan, Cemalettin Ozturk, Luis Quesada, Mohamed Siala, Helmut Simonis, and Nic Wilson. Assigning and scheduling service visits in a mixed urban/rural setting. ***International Journal on Artificial Intelligence Tools***, 29, 2020

2019

CPAIOR 2019 — Begum Genc, Mohamed Siala, Gilles Simonin, and Barry O'Sullivan. An approach to robustness in the stable roommates problem and its comparison with the stable marriage problem. In *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 16th International Conference, **CPAIOR** 2019, Thessaloniki, Greece, June 4-7, 2019, Proceedings*, pages 320–336, 2019

ILP 2019 — Mohamed Siala and Barry O'Sullivan. Combinatorial search from an energy perspective. ***Information Processing Letters***, 148:23–27, 2019

TCS 2019 — Begum Genc, Mohamed Siala, Gilles Simonin, and Barry O'Sullivan. Complexity study for the robust stable marriage problem. ***Theoretical Computer Science***, 775:76–92, 2019

2018

CPAIOR 2018 — Guillaume Escamocher, Mohamed Siala, and Barry O'Sullivan. From backdoor key to backdoor completability: Improving a known measure of hardness for the satisfiable CSP. In *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 15th International Conference, **CPAIOR** 2018, Delft, The Netherlands, June 26-29, 2018, Proceedings*, pages 198–214, 2018

ICTAI 2018 — Mark Antunes, Vincent Armant, Kenneth N. Brown, Daniel A. Desmond, Guillaume Escamocher, Anne-Marie George, Diarmuid Grimes, Mike O'Keeffe, Yiqing Lin, Barry O'Sullivan, Cemalettin Ozturk, Luis Quesada, Mohamed Siala, Helmut Simonis, and Nic Wilson. Assigning and scheduling service visits in a mixed urban/rural setting. In *IEEE 30th International Conference on Tools with Artificial Intelligence, **ICTAI** 2018, 5-7 November 2018, Volos, Greece*, pages 114–121, 2018

2017

IJCAI 2017 — Begum Genc, Mohamed Siala, Barry O'Sullivan, and Gilles Simonin. Finding robust solutions to stable marriage. In *Proceedings of the Twenty-Sixth International Joint Conference on Artificial Intelligence, **IJCAI** 2017, Melbourne, Australia, August 19-25, 2017*, pages 631–637, 2017

CP 2017 — Mohamed Siala and Barry O'Sullivan. Rotation-based formulation for stable matching. In *Principles and Practice of Constraint Programming - 23rd International Conference, **CP** 2017, Melbourne, VIC, Australia, August 28 - September 1, 2017, Proceedings*, pages 262–277, 2017

CPAIOR 2017 — Emmanuel Hebrard and Mohamed Siala. Explanation-based weighted degree. In *Integration of AI and OR Techniques in Constraint Programming - 14th International Conference, **CPAIOR** 2017, Padua, Italy, June 5-8, 2017, Proceedings*, pages 167–175, 2017

COCOA 2017 — Begum Genc, Mohamed Siala, Gilles Simonin, and Barry O'Sullivan. On the complexity of robust stable marriage. In *Combinatorial Optimization and Applications - 11th International Conference, **COCOA** 2017, Shanghai, China, December 16-18, 2017, Proceedings, Part II*, pages 441–448, 2017

ICTAI 2017 — Danuta Sorina Chisca, Mohamed Siala, Gilles Simonin, and Barry O'Sullivan. New models for two variants of popular matching. In *29th IEEE International Conference on Tools with Artificial Intelligence, **ICTAI** 2017, Boston, MA, USA, November 6-8, 2017*, pages 752–759, 2017

2016

Constraints 2016 — Nina Narodytska, Thierry Petit, Mohamed Siala, and Toby Walsh. Three generalizations of the FOCUS constraint. ***Constraints An International Journal***, 21(4):495–532, 2016

CPAIOR 2016 — Mohamed Siala and Barry O'Sullivan. Revisiting two-sided stability constraints. In *Integration of AI and OR Techniques in Constraint Programming - 13th International Conference, **CPAIOR** 2016, Banff, AB, Canada, May 29 - June 1, 2016, Proceedings*, pages 342–357, 2016

2015

EAAI 2015 — Mohamed Siala, Emmanuel Hebrard, and Marie-José Huguet. A study of constraint programming heuristics for the car-sequencing problem. ***Engineering Applications of Artificial Intelligence***, 38:34–44, 2015

CP 2015 — Mohamed Siala, Christian Artigues, and Emmanuel Hebrard. Two clause learning approaches for disjunctive scheduling. In *Principles and Practice of Constraint Programming - 21st International Conference, **CP** 2015, Cork, Ireland, August 31 - September 4, 2015, Proceedings*, pages 393–402, 2015

2014

Constraints 2014 — Mohamed Siala, Emmanuel Hebrard, and Marie-José Huguet. An optimal arc consistency algorithm for a particular case of sequence constraint. ***Constraints An International Journal***, 19(1):30–56, 2014

CPAIOR 2014 — Christian Artigues, Emmanuel Hebrard, Valentin Mayer-Eichberger, Mohamed Siala, and Toby Walsh. SAT and hybrid models of the car sequencing problem. In *Integration of AI and OR Techniques in Constraint Programming - 11th*

*International Conference, **CPAIOR** 2014, Cork, Ireland, May 19-23, 2014. Proceedings*, pages 268–283, 2014

2013

IJCAI 2013

Nina Narodytska, Thierry Petit, Mohamed Siala, and Toby Walsh. Three generalizations of the FOCUS constraint. In ***IJCAI** 2013, Proceedings of the 23rd International Joint Conference on Artificial Intelligence, Beijing, China, August 3-9, 2013*, pages 630–636, 2013

2012

CP 2012

Mohamed Siala, Emmanuel Hebrard, and Marie-José Huguet. An optimal arc consistency algorithm for a chain of atmost constraints with cardinality. In *Principles and Practice of Constraint Programming - 18th International Conference, **CP** 2012, Québec City, QC, Canada, October 8-12, 2012. Proceedings*, pages 55–69, 2012

OTHER INFORMATION

Music

Since 2005 Several experiences as a violin player with Frensh, Irish, and Tunisian bands

2007 - 2010 · Manager of the ENSI-Music association, Tunisia

Mountaineering

2018 Hike leader, UCC mountaineering club, Ireland

December 5, 2021