

# Nadjib Lazaar

ASSISTANT PROFESSOR · UNIVERSITY OF MONTPELLIER

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## Short Biography

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**Nadjib Lazaar** received his Master Sc. and PhD degrees, both in computer science from University of Rennes 1, France, in 2008 and 2011 respectively. Following his PhD, he worked as an INRIA postdoctoral researcher at INRIA-Microsoft Research Joint Center Paris-Saclay till September 2012. In 2012/2013, he worked as postdoctoral researcher at the European ICON project FP7 FET-Open in Montpellier, France. He is currently a tenured assistant professor at the University of Montpellier, and a co-head of the COCONUT team at LIRMM lab. His research interests are situated at the crossroads of Constraint Programming (CP), Data Mining (DM), Machine Learning (ML) and Software Testing (ST). In particular, He is interested in developing techniques and tools for: Constraint Acquisition; Declarative Data Mining; Constraint-Based Software Testing; Software Verification and Validation via Artificial Intelligence.

**For 2019/2020, he is assigned to CNRS for one-year full time.**

## Resume

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**Present Position:** Assistant Professor at University of Montpellier since 2013.

**Previous positions:**

- CNRS Postdoctoral Researcher (2012-2013).
- INRIA Postdoctoral Researcher (2012-2013).

**Education:** PhD (INRIA-IRISA, Rennes/2011); MSc in Computer Science (INRIA-IRISA, Rennes/2008), Computer Science Engineer (University of Oran/2007).

**Field of expertise:** Constraint Acquisition; Declarative Data Mining; Constraint-Based Software Testing; Software Verification and Validation via Artificial Intelligence.

**Publications:** 1 book chapter; 4 journal papers; 20 international conference papers; 7 international workshop paper; 5 national papers; 6 research reports.

**Supervision:** 1 post-doc, 5 PhDs (3 defended) and 4 Master students.

**Editorship and membership:**

- Workflow Chair at the IJCAI-PRICAI2020, the 29th International Joint Conference on Artificial Intelligence and the 17th Pacific Rim International Conference on Artificial IntelligenceThe International Joint Conference on Artificial Intelligence IJCAI 2020.
- Track Chair and Senior PC at the International Conference on Principles and Practice of Constraint Programming CP 2017, 2018, 2019 and 2020.
- Member of the committee program of The International Joint Conference on Artificial Intelligence (IJCAI-ECAI 2018, IJCAI 2019, IJCAI-PRICAI 2020 and IJCAI 2021).
- Member of the committee program of The AAAI Conference on Artificial Intelligence (AAAI 2019, 2020 and 2021).
- Member of the committee program of ECAI 2020, the 24th European Conference on Artificial Intelligence, Europe's premier AI Research venue.
- Member of the committee program of AAMAS 2021, the 20th International Conference on Autonomous Agents and Multiagent Systems.

- Member of the committee program of The International Conference on Principles and Practice of Constraint Programming (CP 2016, 2017, 2018, 2019 and 2020).
- Member of the committee program of The IEEE International Conference on Artificial Intelligence Testing AiTest 2019 and 2020.
- Member of the committee program of The IEEE International Conference on Software Quality, Reliability & Security QSIC 2013, 2014 and QSR 2015.
- Member of the committee program of Languages for Data Mining and Machine Learning workshop LML 2013.
- Member of the committee program of Journées Francophones de Programmation par Contraintes from 2015 to 2019.

### Research projects and grants:

- TAILOR Project, H2020 European project (participant, 2020-2023).
- Norwegian RCN T-LARGO project (participant, 2018-2022).
- PEPS I3A INSMI and IN2SI project (Leader, 2018).
- PHC AURORA France-Norway project (Leader, 2018).
- UM PRECONSY project (participant, 2017).
- PEPS-JCJC 2015 IN2SI project (leader, 2015).
- European ICON project (FP7 FET-Open) (participant, 2012-2015).
- ANR BR4CP project (scientific coordinator, 2012-2015).
- ADAPT project, Inria-Microsoft joint Center (participant, 2011-2012).
- INRIA-DGRSDT Algeria project (participant, 2010-2012).
- ANR CAVERN project (participant, 2009-2011).

## Education

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### PhD in Computer Science

*Rennes, France*

UNIVERSITY OF RENNES 1

*Oct. 2008 - Sept. 2011*

- **Laboratory** INRIA-IRISA. **Team-Project:** Celtique. **Advisors:** Arnaud Gotlieb and Thomas Jensen. **Title:** Methodology and tool for fault detection, localisation and correction of constraint programs. **Committee:** Mireille Ducasse, Patrick Albert, Nicolas Beldiceanu, Arnaud Gotlieb, Thomas Jensen, Arnaud Lallouet, Yahia Lebbah. **Qualification:** "Très honorable avec félicitations du jury." (cum laudae). **Rennes, France, December 2011.**

### Master Sc. Degree in Computer Science

*Rennes, France*

UNIVERSITY OF RENNES 1

*Oct. 2007 - Sept. 2008*

- **Michel Metivier foundation scholarship.** **Master:** Computer Science Security. **Thesis:** Constraint-Based Local Search for Automatic Test Data Generation. **Advisor:** Arnaud Gotlieb. **Laboratory:** INRIA-IRISA. **Team-Project:** Lande.

### Engineer's degree in Computer Science

*Oran, Algeria*

UNIVERSITÉ ES-SENIA D'ORAN

*Oct. 2002 - Sept. 2007*

- **valedictorian.** **Thesis:** Deployment and verification of cryptographic protocols in electronic commerce. **Advisor:** Yahia Lebbah. **internship:** Sonatrach. **Qualification:** "Très honorable avec félicitations du jury." (cum laudae). **Oran, July, 2007.**

## Work Experience

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## Assistant Professor

IUT OF MONTPELLIER

- Assistant Professor at IUT of Montpellier (University of Montpellier). LIRMM, CNRS Laboratory. **Team:** COCONUT.

Montpellier, France

Since 2013

## CNRS Postdoctoral Researcher

LIRMM, CNRS

- CNRS Postdoctoral researcher at LIRMM. **Team:** COCONUT. **European Project:** ICON (FP7 FET-Open). **Collaboration:** Christian Bessiere. **Topic:** Constraint Acquisition (Algorithms and complexities).

Montpellier, France

Oct. 2012 - Sept. 2013

## INRIA Postdoctoral Researcher

INRIA-MICROSOFT JOINT CENTRE

- INRIA Postdoctoral Researcher at INRIA-Microsoft Research Joint Centre. **Team-project:** TAO-LRI. **Collaborations:** Michèle Sebag, Youssef Hamadi. **Topic:** Cooperation control in Parallel SAT Solving: a Multi-armed Bandit Approach.

Saclay, France

Oct. 2011 - Sept. 2012

## Research interests

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Leader of **”Constraint Acquisition, Data Mining and Software validation”** at COCONUT Team, Nadjib Lazaar research interests are situated at the crossroads of Constraint Programming (CP), Data Mining (DM), Machine Learning (ML) and Software Testing. In particular, I’m interested in developing techniques and tools for:

- Constraint Acquisition.
- Declarative Data Mining.
- Constraint-Based Software Testing.
- Software Verification and Validation via Artificial Intelligence.

## Awards and Honors

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- Best paper award at the first IEEE international conference on Artificial Intelligence Testing (IEEE-AI Testing, San Francisco, Apr. 2019).
- Prime d’encadrement doctoral et de recherche PEDR (2015-2019) and (2019-2023).
- One-year full time CNRS assignment 2019/2020.
- Congés pour Recherches ou Conversions Thématiques (6 months CRCT 2019/2020).

## Educational responsibilities

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- Leader of software engineering at IUT Montpellier (first and second year) (Since 2013).
- Leader of 4th semester project IUT de Montpellier (Since 2015).
- Leader of « AI Based Software Engineering » Master 2 UM – Software Engineering (From 2020).
- Co-leader of « Constraint Reasoning» Master 2 UM – Theoretical computer science (Since 2013).
- Co-leader of « Exploration Algorithms» Master 1 UM – Images, Games et Intelligent Agents (Since 2013).
- Chair of the Doctoral Program at CP’18 ([link](#)).
- Timetable responsibility at IUT of Montpellier (2017-2019).

## Administrative responsibilities

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### Member of recruitment committees:

- MCF INSA de Toulouse, LAAS lab., Toulouse, France, 2018.
- MCF IUT de Beziers, LIRMM, Montpellier, France, 2018.

**Co-head** of COCONUT team, LIRMM, since 2018 .

**Member of project committee** at computer science department at LIRMM lab, since 2018.

**LIRMM Scientific member** at the doctoral school I2S of university of Montpellier, since 2017.

### Member of :

- Association for Constraint Programming (ACP).
- Association Française pour la Programmation par Contraintes AFPC.
- Development Forums of constraint programming solvers (Gecode, OPL, Choco).

## Five Major Publications

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### In Constraint Acquisition:

- Christian Bessiere, Frédéric Koriche, Nadjib Lazaar, and Barry O’Sullivan. Constraint acquisition. *Artificial Intelligence*, 244:315–342, 2017 (**IF: 3.034**)

### In Declarative Data Mining:

- Nadjib Lazaar, Yahia Lebbah, Samir Loudni, Mehdi Maamar, Valentin Lemière, Christian Bessiere, and Patrice Boizumault. A global constraint for closed frequent pattern mining. In *Principles and Practice of Constraint Programming - 22nd International Conference, CP 2016, Toulouse, France, September 5-9, 2016, Proceedings*, pages 333–349, 2016 (**core2018: A**)
- Mohamed-Bachir Belaid, Christian Bessiere, and Nadjib Lazaar. Constraint programming for association rules. In *Proceedings of the 2019 SIAM International Conference on Data Mining, SDM 2019, Calgary, Alberta, Canada, May 2 - 4, 2019*. SIAM, 2019 (**core2018: A**)

### In IA for Software Verification and Validation:

- Carlo Ieva, Arnaud Gotlieb, Souhila Kaci, and Nadjib Lazaar. Discovering program topoi via hierarchical agglomerative clustering. *IEEE Trans. Reliability*, 67(3):758–770, 2018 (**IF: 2.729**)
- Mehdi Maamar, Nadjib Lazaar, Samir Loudni, and Yahia Lebbah. Fault localization using itemset mining under constraints. *Automated Software Engineering*, 24(2):341–368, 2017 (**IF: 1.806**)

## Students’ supervision & committees’ participation

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### Postdoctoral Students:

- Kostandina Veljanovska. "Reinforcement Learning Based Constraint Acquisition". Erasmus scholarship. Dec. 2014 to Juin 2015. LIRMM.

### PhD Students:

8. Grégoire Menguy. "Combining Program Analysis and Machine Learning for Cybersecurity". With Sébastien Bardin and Arnaud Gotlieb, ongoing (2019-2022), CEA scholarship.
7. Nassim Belmecheri. "Boosting Combinatorial Problem Solving with Machine Learning". With Yahia Lebbah, ongoing (2019-2022), Campus France Scholarship.
6. Farah Amel Benzeghimi. "Numerical Pattern Mining Based on Constraint Programming". With Christian Bessiere, ongoing (2019-2022), Algerian government scholarship.
5. Mohamed Bachir Belaid. "Declarative Itemset Mining Based on Constraint Programming". With Christian Bessiere, defended: 08 Jan. 2020, Algerian government scholarship.
4. Carlo Ieva. "Machine Learning Based Software Testing: a Comprehensive Study for Automated Software Verification and Validation". With Arnaud Gotlieb and Souhila Kaci, defended: 23 Nov. 2018, SIMULA funding (Norway).
3. Robin Arcangioli. "Multiple Constraint Acquisition". With Christian Bessiere, Aborted (2015-2018), MESR scholarship.
2. Mehdi Maamar. "Fault localization using constraint programming and pattern mining". With Yahia Lebbah, defended: 29 May 2017, Campus France Scholarship.
1. Abderrazak Daoudi. "Boosting Constraint Acquisition". With Christian Bessiere and El Houssine Bouyakhf, defended: May 2016, AVEROES Scholarship.

**Master Students:** The training periods/internships took place at LIRMM CNRS/UM, Montpellier, France.

4. Mehdi Zrhal. "Declarative Data Mining". With Christian Bessiere and Philippe Vismara, University of Montpellier, June 2019.
3. Robin Arcangioli. "Constraint Acquisition". With Christian Bessiere, University of Montpellier, June 2015.
2. Gaëlle Hisler. "Preferences based reasoning". With Christian Bessiere, Remi Coletta and Souhila Kaci, University of Montpellier, June 2014.
1. Abdelmourhit Maziane. "Clustering under constraints". With Christian Bessiere, Remi Coletta and Joel Quinqueton, University of Montpellier, June 2013.

#### **Other students:**

3. Teddy Lee. "Constraint Acquisition Platform". Three months training period. Second year IUT of Montpellier, July 2019.
2. Julien Brochier. "Cognitive aspects in Constraint Acquisition". One month training period. First year at Bordeaux INP. July 2018.
1. Julien Revel. "Web application for Constraint Acquisition". Two month training period. Telecom Nancy? July 2015.

#### **Jury member in doctoral committees:**

- Examiner: Thesis of Namrata Patel. "Mise en œuvre des préférences dans des problèmes de décision". University of Montpellier, October 2016.

## **Collaborations**

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#### **International collaborations:**

- SIMULA lab. Oslo: (Arnaud Gotlieb, Carlo Ieva, Mathieu Collet).
- ABB Robotics, Bryne, Norvège: (Morten Mossige).

- University of Oran: (Yahia Lebbah, Nouredine Aribi).
- University of Western Macedonia, Kozani, Greece: (Kostas Stergiou, Dimosthenis C. Tsouros).
- University College Cork: (Barry O’Sullivan, Helmut Simonis).
- KU Leuven: (Luc De Raedt, Siegfried Nijssen, Tias Guns).
- Nicta Australia: (Toby Walsh).
- Carnegie Mellon University, USA: (Nina Narodytska).
- University of Laval Québec: (Claude-Guy Quimper).
- University of Rabat: (El-Houcine Bouyakhf, Redouane Ezzahir).

#### **National collaborations:**

- CEA Paris Saclay: (Sébastien Bardin).
- LAAS-CNRS Toulouse: (Emmanuel Hebrard).
- INRA Agro ParisTech: (George Katsirelos).
- CRIL-Lens: (Said Jabbour, Lakhdar Sais, Frédéric Koriche, Anastasia Paparrizou).
- LRI-Paris: (Michèle Sebag).
- GREYC-Caen: (Samir Loudni).

## **International mobility & guest speaker**

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#### **Visiting researcher/professor at:**

- LITIO lab. Oran, Algeria (2 weeks), July 2019.
- SIMULA lab. Oslo, Norway (1 week), May 2019.
- SIMULA lab. Oslo, Norway (1 week), December 2018.
- SIMULA lab. Oslo, Norway (1 week), October 2018.
- LITIO lab. Oran, Algeria (1 week), July 2018.
- The Insight Centre for Data Analytics, Cork, Ireland (1 week), May 2013.

#### **Invited seminars and guest lectures :**

1. Dagstuhl Seminar 20421 on **Data-Driven Combinatorial Optimization**, Dagstuhl, October 2020.
2. *Declarative Data Mining for Software Testing*. GT-Verif GDR-IM, Nantes, June 2019.
3. *Declarative Data Mining*. Big Data/IA LIRMM Day, SupAgro, Montpellier, June 2019.
4. *Constraint Acquisition*. LIRMM Seminar, Montpellier, June 2019.
5. *Constraint Acquisition*. Invited Talk at NordConsNet 2019 workshop, Oslo, Norway, May 2019
6. *Specialised vs Declarative Data Mining: Software Testing Applications*. Certus 13th User Partner Workshop, SIMULA, Oslo, October 2018.
7. *Constraint Acquisition, Algorithms and Complexities*. 23rd International Symposium on Mathematical Programming (ISMP’18), Bordeaux, July 2018.
8. *Constraint Acquisition*. CAVIAR group Meeting, DGR-IA, Jussieu, Paris, November 2017.

9. *Fault localization using itemset mining under constraints*. Invited talk at the 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE'17), University of Illinois, Urbana-Champaign, Illinois, USA, October 2017.
10. *Constraint Acquisition*. Pôle Science des Données et de la Décision – UMR LS2N Nantes, May 2017.
11. *New approaches to Constraint Acquisition*. Invited Talk at ROADEF'17- GDR-RO – groupRO&Constraints, Metz, February 2017.
12. *QUACQ and ModelSeeker combination*. ICON european project meeting, Leuven, Belgium, February 2014.
13. *Quick Acquisition*. ANR BR4CP project meeting, Paris, April 2013.
14. *Ask&Solve solver*. ICON european project meeting. Montpellier, april 2013.
15. *QUACQ : Quick Acquisition*. ICON european project meeting. Leuven, Belgium, February 2013.
16. *Constraint Acquisition*. ICON european project meeting. Pisa, Italy November 2012.
17. *Cooperation-control in Parallel SAT Solving: a Multi-armed Bandit Approach*. GREYC lab. Caen, June 2012.
18. *A learning approach for parallel SAT solving*. KU Leuven, Belgium. May 2012.
19. *A methodology and a tool for test, fault localization and automatic correction of constraints programs*. CeP-I3S, Nice, May 2012.
20. *Testing Constraint Programs*. CRIL lab, Lens, April 2011.

## Scientific animation and responsibilities

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### Work group Animation:

- Animator (with Frederic Koriche) of the work group "Constraints and Machine Learning" (GT-CAVIAR) of GDR-IA (Since 2017).

### Workflow Chair at The International Joint Conference on Artificial Intelligence IJCAI 2020.

### Organization of Summer Schools:

- European Summer School on Artificial Intelligence and Software Verification and Validation, Montpellier, VIVA 2021.
- International Summer School on Combinatorial Optimization, Constraints and Learning, Toulouse, 2020.

### Chair of:

- Test and Verification Track at the 25th International Conference on Principles and Practice of Constraint Programming, Stamford, USA, CP 2019.
- Test and Verification Track at the 24th International Conference on Principles and Practice of Constraint Programming, Lille, France, CP 2018.
- Test and Verification Track at the 23rd International Conference on Principles and Practice of Constraint Programming, Melbourne, Australia, CP 2017.

### Senior Committee Program Member of:

- The 24th International Conference on Principles and Practice of Constraint Programming, Lille, France, CP 2018.

- The 23rd International Conference on Principles and Practice of Constraint Programming, Melbourne, Australia, CP 2017.

**Committee Program Member of:**

- The 35th AAAI Conference on Artificial Intelligence, Virtual Conference, AAAI 2021.
- The 30th International Joint Conference on Artificial Intelligence, Montreal, Canada, IJCAI 2021.
- The 20th International Conference on Autonomous Agents and Multiagent Systems, London, UK, AAMAS 2021.
- The 29th International Joint Conference on Artificial Intelligence, Yokohama, Japan, IJCAI 2020.
- The 34th AAAI Conference on Artificial Intelligence, New York, USA, AAAI 2020.
- The second IEEE International Conference on Artificial Intelligence Testing, Oxford, UK, AiTest 2020.
- The 24th European Conference on Artificial Intelligence, Virtual Conference, ECAI 2020.
- The 26th International Conference on Principles and Practice of Constraint Programming, Virtual Conference, CP 2020.
- The 28th International Joint Conference on Artificial Intelligence, Macao, China, IJCAI 2019.
- The 27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence, Stockholm, Sweden, IJCAI-ECAI 2018.
- The 33rd AAAI Conference on Artificial Intelligence, Hawaii, USA, AAAI 2019.
- The 25th International Conference on Principles and Practice of Constraint Programming, Stamford, USA, CP 2019.
- The 24th International Conference on Principles and Practice of Constraint Programming, Lille, France, CP 2018.
- The 23rd International Conference on Principles and Practice of Constraint Programming, Melbourne, Australia, CP 2017.
- The 22nd International Conference on Principles and Practice of Constraint Programming, Toulouse, France, CP 2016.
- The first IEEE International Conference on Artificial Intelligence Testing, San Francisco, USA, AiTest 2019.
- The first IEEE International Conference on Software Quality, Reliability & Security, Vancouver, Canada, QSR 2015.
- The 14th IEEE International Conference on Quality Software, Dallas, USA, QSIC 2014.
- The 13th IEEE International Conference on Quality Software, Nanjing, China, QSIC 2013.
- Languages for Data Mining and Machine Learning workshop, Prague, Czech Republic, LML 2013.
- Journées Francophones de Programmation par Contraintes (JFPC), Since 2015.

**Peer-reviewing activities:**

- For the following Journals:
  - Artificial Intelligence Journal (AIJ).
  - Constraints Journal.
- Of some parts of the following books:
  - Data Mining and Constraint Programming, Foundations of a Cross-Disciplinary Approach. Springer, 2014.



- And for the following international conferences:
  - The International Joint Conference on Artificial Intelligence (IJCAI 2016, 2017, 2018, 2019)
  - The AAAI Conference on Artificial Intelligence (AAAI 2017, 2019)
  - The International Conference on Principles and Practice of Constraint Programming (CP 2013 to 2019)
  - The IEEE International Conference on Artificial Intelligence Testing (AiTest 2019)
  - Journées Francophones de Programmation par Contraintes (JFPC 2012 to 2019)
  - The IEEE International Conference on Software Quality, Reliability & Security, QSR 2015.
  - The 13th and 14th International Conference on Quality Software (QSIC'13, QSIC'14)
  - The International Conference on Tests & Proofs (TAP'11)
  - Constraints in Software Testing, Verification, and Analysis workshop (CSTVA'11)
  - Languages for Data Mining and Machine Learning workshop (LML'13)

**Member of organization committee** of JFPC 2016: des Journées Francophones de Programmation par Contraintes, Montpellier.

## Software development

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- **Constraint Acquisition platform:** written in Java and using Choco Solver 4.0.10 ([gitlab link](#)) ([demo](#)).
- **Declarative Data Mining platform:** CPMINER is a platform for declarative data mining including several implementations of global constraints for itemset and association rules mining, written in C++, Java and Scala languages ([link](#)).
- **BESS solver:** a Parallel SAT Solver with a cooperation control based on multi-armed bandit approach, written in C++ ([link](#)).
- **CPTEST tool:** a tool for fault detection, localisation and correction of constraint programs written in Java and based on Ilog-Solver ([link](#)).
- **cpctest4choco:** a Choco solver library for fault detection, localization and correction in constraint programs, written in Java ([link](#)).

## Publications

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### BOOK CHAPTER

- Christian Bessiere, Abderrazak Daoudi, Emmanuel Hebrard, George Katsirelos, Nadjib Lazaar, Younes Mechqrane, Nina Narodytska, Claude-Guy Quimper, and Toby Walsh. New approaches to constraint acquisition. In *Data Mining and Constraint Programming - Foundations of a Cross-Disciplinary Approach*, pages 51–76. 2016

### ACADEMIC JOURNALS

4. Carlo Ieva, Arnaud Gotlieb, Souhila Kaci, and Nadjib Lazaar. Discovering program topoi via hierarchical agglomerative clustering. *IEEE Trans. Reliability*, 67(3):758–770, 2018
3. Christian Bessiere, Frédéric Koriche, Nadjib Lazaar, and Barry O'Sullivan. Constraint acquisition. *Artificial Intelligence*, 244:315–342, 2017

2. Mehdi Maamar, Nadjib Lazaar, Samir Loudni, and Yahia Lebbah. Fault localization using itemset mining under constraints. *Automated Software Engineering*, 24(2):341–368, 2017
1. Nadjib Lazaar, Arnaud Gotlieb, and Yahia Lebbah. A CP framework for testing CP. *Constraints*, 17(2):123–147, 2012

## INTERNATIONAL CONFERENCES

21. Mathieu Collet, Arnaud Gotlieb, Nadjib Lazaar, Mats Carlsson, Dusica Marijan, and Morten Mossige. Robtest: A CP approach to generate maximal test trajectories for industrial robots. In Helmut Simonis, editor, *Principles and Practice of Constraint Programming - 26th International Conference, CP 2020, Louvain-la-Neuve, Belgium, September 7-11, 2020, Proceedings*, volume 12333 of *Lecture Notes in Computer Science*, pages 707–723. Springer, 2020
20. Mohamed-Bachir Belaid, Christian Bessiere, and Nadjib Lazaar. Constraint programming for mining borders of frequent itemsets. In *Proceedings of the Twenty-eight International Joint Conference on Artificial Intelligence, IJCAI 2019, Macao, China, 10-16 August 2019*
19. Nouredine Aribi, Nadjib Lazaar, Yahia Lebbah, Samir Loudni, and Mehdi Maamar. A multiple fault localization approach based on multicriteria analytical hierarchy process. In *First IEEE International Conference on Artificial Intelligence Testing, AiTest 2019, San Francisco East Bay, California, USA, April 4-9, 2019*
18. Carlo Ieva, Arnaud Gotlieb, Nadjib Lazaar, and Souhila Kaci. Deploying smart program understanding on a large code base. In *First IEEE International Conference on Artificial Intelligence Testing, AiTest 2019, San Francisco East Bay, California, USA, April 4-9, 2019*
17. Mathieu Collet, Arnaud Gotlieb, Nadjib Lazaar, and Morten Mossige. Stress testing of single-arm robots through constraint-based generation of continuous trajectories. In *First IEEE International Conference on Artificial Intelligence Testing, AiTest 2019, San Francisco East Bay, California, USA, April 4-9, 2019*
16. Mohamed-Bachir Belaid, Christian Bessiere, and Nadjib Lazaar. Constraint programming for association rules. In *Proceedings of the 2019 SIAM International Conference on Data Mining, SDM 2019, Calgary, Alberta, Canada, May 2 - 4, 2019*. SIAM, 2019
15. Christian Bessiere, Nadjib Lazaar, and Mehdi Maamar. User’s constraints in itemset mining. In *Principles and Practice of Constraint Programming - 24th International Conference, CP 2018, Lille, France, August 27-31, 2018, Proceedings*, pages 537–553, 2018
14. Hajar Ait Addi, Christian Bessiere, Redouane Ezzahir, and Nadjib Lazaar. Time-bounded query generator for constraint acquisition. In *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 15th International Conference, CPAIOR 2018, Delft, The Netherlands, June 26-29, 2018, Proceedings*, pages 1–17, 2018
13. Carlo Ieva, Arnaud Gotlieb, Souhila Kaci, and Nadjib Lazaar. Discovering program topoi through clustering. In *Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence, (AAAI-18), the 30th Innovative Applications of Artificial Intelligence (IAAI-18), and the 8th AAAI Symposium on Educational Advances in Artificial Intelligence (EAAI-18), New Orleans, Louisiana, USA, February 2-7, 2018*, pages 7771–7778, 2018
12. Nouredine Aribi, Mehdi Maamar, Nadjib Lazaar, Yahia Lebbah, and Samir Loudni. Multiple fault localization using constraint programming and pattern mining. In *29th IEEE International Conference on Tools with Artificial Intelligence, ICTAI 2017, Boston, MA, USA, November 6-8, 2017*, pages 860–867, 2017
11. Nadjib Lazaar, Yahia Lebbah, Samir Loudni, Mehdi Maamar, Valentin Lemière, Christian Bessiere, and Patrice Boizumault. A global constraint for closed frequent pattern mining. In *Principles and Practice of Constraint Programming - 22nd International Conference, CP 2016, Toulouse, France, September 5-9, 2016, Proceedings*, pages 333–349, 2016
10. Abderrazak Daoudi, Younes Mechqrane, Christian Bessiere, Nadjib Lazaar, and El-Houssine Bouyahf. Constraint acquisition with recommendation queries. In *Proceedings of the Twenty-Fifth International*

*Joint Conference on Artificial Intelligence, IJCAI 2016, New York, NY, USA, 9-15 July 2016, pages 720–726, 2016*

9. Robin Arcangioli, Christian Bessiere, and Nadjib Lazaar. Multiple constraint acquisition. In *Proceedings of the Twenty-Fifth International Joint Conference on Artificial Intelligence, IJCAI 2016, New York, NY, USA, 9-15 July 2016*, pages 698–704, 2016
8. Abderrazak Daoudi, Nadjib Lazaar, Younes Mechqrane, Christian Bessiere, and El-Houssine Bouyakhf. Detecting types of variables for generalization in constraint acquisition. In *27th IEEE International Conference on Tools with Artificial Intelligence, ICTAI 2015, Vietri sul Mare, Italy, November 9-11, 2015*, pages 413–420, 2015
7. Mehdi Maamar, Nadjib Lazaar, Samir Loudni, and Yahia Lebbah. Localisation de fautes à l'aide de la fouille de données sous contraintes. In *Colloque sur l'Optimisation et les Systemes d'Information COSI 2015, 1 au 3 Juin 2015, Oran, Algerie, 2015*
6. Christian Bessiere, Remi Coletta, and Nadjib Lazaar. Solve a constraint problem without modeling it. In *26th IEEE International Conference on Tools with Artificial Intelligence, ICTAI 2014, Limassol, Cyprus, November 10-12, 2014*, pages 1–7, 2014
5. Christian Bessiere, Remi Coletta, Abderrazak Daoudi, Nadjib Lazaar, Younes Mechqrane, and El-Houssine Bouyakhf. Boosting constraint acquisition via generalization queries. In *ECAI 2014 - 21st European Conference on Artificial Intelligence, 18-22 August 2014, Prague, Czech Republic - Including Prestigious Applications of Intelligent Systems (PAIS 2014)*, pages 99–104, 2014
4. Christian Bessiere, Remi Coletta, Emmanuel Hebrard, George Katsirelos, Nadjib Lazaar, Nina Narodytska, Claude-Guy Quimper, and Toby Walsh. Constraint acquisition via partial queries. In *IJCAI 2013, Proceedings of the 23rd International Joint Conference on Artificial Intelligence, Beijing, China, August 3-9, 2013*, pages 475–481, 2013
3. Nadjib Lazaar, Arnaud Gotlieb, and Yahia Lebbah. A framework for the automatic correction of constraint programs. In *Fourth IEEE International Conference on Software Testing, Verification and Validation, ICST 2011, Berlin, Germany, March 21-25, 2011*, pages 319–326, 2011
2. Nadjib Lazaar, Arnaud Gotlieb, and Yahia Lebbah. Fault localization in constraint programs. In *22nd IEEE International Conference on Tools with Artificial Intelligence, ICTAI 2010, Arras, France, 27-29 October 2010 - Volume 1*, pages 61–67, 2010
1. Nadjib Lazaar, Arnaud Gotlieb, and Yahia Lebbah. On testing constraint programs. In *Principles and Practice of Constraint Programming - CP 2010 - 16th International Conference, CP 2010, St. Andrews, Scotland, UK, September 6-10, 2010. Proceedings*, pages 330–344, 2010

## **INTERNATIONAL WORKSHOPS**

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