

Curriculum vitæ

Jean-Charles Régin

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Other Personal Data:

born in Mulhouse (France), January, 11 1966
french nationality

Educational Background

- Habilitation à Diriger des Recherches (HDR) : "*Modelization and Global Constraints in Constraint Programming*". Université Nice, November 2004.
- Doctorat Informatique (PhD Thesis in Computer Science) : "*Development of algorithmic tools for Artificial Intelligence and their application to organic chemistry*". Thesis supervisor O. Gascuel (CNRS). Université Montpellier II, December 1995.
- D.E.A. Informatique (Master in Computer Science) : "*Machine learning of strategical bonds of organic molecules*", Université Montpellier II, 1990.
- Maîtrise Informatique (B. Sc. in Computer Science). Université de Bourgogne, 1988.

Employment History

- Aug 05 - today: Director Constraint Programming at ILOG. In charge of the promotion of Constraint Programming in general.
- Jan 05 - Jul 05: Visitor Scientist, Cornell University.
- Mar 01 - Dec 04: Director Constraint Programming at ILOG. In charge of the products: ILOG Solver, ILOG JSolver, ILOG Concert, and ILOG JConcert. Management of a team of 7 persons whom 4 have a PhD.

- Jul 00 - Feb 01: Constraint Programming Expert at ILOG.
- Jul 1998 - Jul 00: Project Manager of ILOG Solver at ILOG.
- Jan 1996 - Jun 98: Development Engineer ILOG Solver at ILOG.
- Jun 1991 - Dec 95: PhD thesis at LIRMM (Laboratory of Computer Science, Robotic and Microelectronic of Montpellier). This work was supported by SANOFI-CHIMIE and CNRS.
- Dec 90 - Jun 91: Temporary Lecturer, CNRS. I have carried out some work to design and implement the system RESYN : a synthesis-planning system in organic chemistry.

Scientific Activities

- Co-editor with Pascal Van Hentenryck of the electronic journal Constraint Programming Letters.
- Member of the steering committee of the Conference CP-AI-OR.
- Member of the editorial board of Constraints Journal.
- Member of the "Comit de Pilotage de l'option GIPAD", Ecole des Mines de Nantes, 2007.
- Elected member of the executive committee of the Association for Constraint Programming in 2006.
- Chairman and organizer (with Michel Rueher) of CP-AI-OR'04, First International Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems.
- Main organizer of the IJCAI-99 workshop on Non Binary Constraints.
- Main organizer of the ECAI-98 workshop on Non Binary Constraints.
- Member of the program committee of the conferences: AAAI-08 (senior member), CP-AI-OR'08, CP-AI-OR'07, CP-AI-OR'06, CP'06, CP'05, AAAI'05, CP-AI-OR'05, CP-AI-OR'04, CP'03, CP'01.

PhD Exam Committes

- Xavier Lorca: "Contraintes de Partionnement de Graphe", Universit de Nantes, Oct. 2007 (committee member)
- Hadrien Cambazard: "Rsolution de problmes combinatoires par des approches fondes sur la notion dexplication", Universit de Nantes, Nov 2006 (reviewer)

- Guillaume Rochart: "Explication et programmation par contraintes avancées", Université de Nantes, Dc. 2005 (reviewer)
- François Delobel: "Résolution de contraintes réelles non linéaires", Université de Nice-Sophia Antipolis, Janvier 2000 (committee member)

HDR Exam Committees

- Carmen Gervet: "Programmation par Contraintes sur Domaines Ensemblistes", HDR, Université de Nice-Sophia Antipolis, Dc 2006 (reviewer)

Teaching Activities

- Ecole polytechnique. Course on integration of OR algorithms in constraint programming (2003, 2004, 2007).
- Ecole Centrale de Paris. Courses on constraint programming (2004,2007).
- University of Nice. Master in Computer Science. Courses on constraint programming (every year since 1998).
- University of Montpellier II. Master in Computer Science. Courses on constraint programming (1998 and 1999).
- Various teaching activities (350 h) in local university and engineer school: Université Montpellier II, ESARC-ESSIGE, (private school – 1st, 2nd years) (1990-1994).

Supervisorships

- I have been the co-supervisor (with C. Bessière) of the PhD Thesis of Thierry Petit: "Modélisation et Algorithmes de Résolution de Problèmes Sur-Contraintes"(in french). University of Montpellier II, 29 Nov, 2002.
- I am co-supervisor (with M. Minoux) of the PhD Thesis of Diego-Olivier Fernandes-Pons. University of Paris VI Pierre et Marie Curie.

Projects

- Feb 03 – Dec 04: In charge of the ILOG's part of the FADO project: French Ministry of Industry project on flexibility in Constraint Programming (ILOG's grant 240,000 euros.)

- Jun 03 – Jun 04: Principal investigator of the project "Integrating OR algorithms and randomization with constraint programming", granted by the European Office of Aerospace Research and Developpement a detachment of the Air Force of Scientific Research EOARD-AFOSR FA8655-03-1-3022 (ILOG's grant \$25,000).
- Jun 99 – Sep 02: In charge of the ILOG's part of the ECSPLAIN project: European project on over-constrained problems (ILOG's grant 320,000 euros.)
- Mar 99 – May 01: In charge of the ILOG's part of the ROCOCO project: French Telecom Ministry project on telecom network design (ILOG's grant 150,000 euros.)

Honour

The RESYN system, of which I am a co-author, was awarded in 1993 the first prize (50 000 FF) in innovative research granted by the ADER Languedoc Roussillon (association for the development of education and research).

Publications

Thesis

1. J-C Régin: "*Modelization and Global Constraints in Constraint Programming*", Habilitation à Diriger des Recherches (HDR), Université Nice, November 2004.
2. J-C Régin: "*Development of algorithmic tools for Artificial Intelligence and their application to organic chemistry*", Doctorat Informatique (PhD Thesis in Computer Science), Université Montpellier II, December 1995.
3. J-C Régin: "*Machine learning of strategical bonds of organic molecules*", D.E.A. Informatique (Master in Computer Science), Université Montpellier II, 1990.

Book Chapter

1. P. Schaus, Y. Deville, P. Dupont and J-C. Régin: "Simplification and extension of the SPREAD Constraint", **Future and Trends of Constraint Programming**, p.95-99, 2007
2. J-C Régin: "Global Constraints and Filtering Algorithms", in "Constraints and Integer Programming Combined", Kluwer, M. Milano editor, 2003.

Proceedings Editor

1. J-C. Régin and M. Rueher (Eds.) "Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems", First Interna-

tional Conference, CPAIOR 2004, Nice, France, April 20-22, 2004, Proceedings Series : Lecture Notes in Computer Science , Vol. 3011.

Journals

1. J-C. Régin, M. Rueher "Inequality-sum : a global constraint capturing the objective function", **RAIRO Operations Research**, 39, pp 123-139, 2005.
2. C. Bessière, J-C. Régin, R.H.C. Yap, Y. Zhang: "An Optimal Coarse-grained Arc Consistency Algorithm", **Artificial Intelligence**, vol 165 (2), pp 165–185, 2005.
3. J-C Régin: "Cost based Arc Consistency for Global Cardinality Constraints", **Constraints**, an International Journal, pp 387–405, Vol 7, Issue 3-4, 2002.
4. J-C. Régin: "Minimization of the number of breaks in sports scheduling problems using constraint programming", **DIMACS Series in Discrete Mathematics and Theoretical Computer Science**, Volume 57, pp 115–130, 2001.
5. C. Bessière, E.C Freuder and J-C. Régin: "Using Constraint Metaknowledge to Reduce Arc Consistency Computation", **Artificial Intelligence**, vol.107 (1), pp 125–148, 1999.

International Conferences

Highly Refereed International Conference Papers

1. J-C. Régin: "Simpler and incremental consistency checking and arc consistency filtering algorithms for the weighted spanning tree constraint", **CP-AI-OR'08**, Paris, France, 2008.
2. P. Schaus, Y. Deville, P. Dupont and J-C. Régin: "The Deviation Constraint", **CP-AI-OR'07**, Brussels, Belgium, pp. 260-274, 2007.
3. W-J. van Hove and J-C. Régin: "Open Constraints in a Closed World", **CP-AI-OR'06**, Cork, Ireland, pp. 244-257, 2006.
4. J-C. Régin: "Maintaining arc consistency algorithms during the search without additional space cost", **CP'05**, Sitges, Spain, 2005.
5. J-C. Régin: "AC-*: A Configurable, Generic and Adaptive Arc Consistency Algorithm", **CP'05**, Sitges, Spain, 2005.
6. G. Pesant and J-C. Régin: "SPREAD: A Balancing Constraint Based on Statistics", **CP'05**, Sitges, Spain, 2005.
7. O. Lhomme and J-C. Régin: "A Fast Arc Consistency Algorithm for n-ary Constraints", **AAAI-05**, Pittsburgh, USA, 2005.
8. J-C. Régin: "Combination of Among and Cardinality Constraints", **CP-AI-OR'05**, Prague, Czech Republic, 2005.
9. J-C. Régin and C. Gomes: "Cardinality Matrix Constraint", **CP'04**, Toronto , Canada, pp 572–587, 2004.
10. J-C. Régin: "Using Constraint Programming to solve the Maximum Clique Problem", **CP'03**, Kinsale, Ireland, pp 634–648, 2003.

11. T. Petit, J-C. Régin, and C. Bessière: "Range-based Algorithm for Max-CSP", **CP'02**, Ithaca, NY, USA, pp 280–294, 2002.
12. C. Le Pape, L. Perron, J-C. Régin, and P. Shaw: "Robust and Parallel Solving of a Network Design Problem", **CP'02**, Ithaca, NY, USA, pp 633–648, 2002.
13. J-C. Régin, T. Petit, C. Bessière, and J-F. Puget: "New Lower Bounds of Constraint Violations for Over-Constrained Problems", **CP'01**, Chyprus, pp 332–345, 2001.
14. T. Petit, J-C. Régin, and C. Bessière, "Specific Filtering Algorithms for Over-Constrained Problems", **CP'01**, Chyprus, pp 451–463, 2001.
15. C. Bessière and J-C. Régin, "Refining the Basic Constraint Propagation Algorithm", **IJCAI-01**, Seattle, WA, USA, pp 309–315, 2001.
16. J-C Régin and M. Rueher, "A global constraint combining a sum constraint and binary inequalities", **CP'00**, Singapore, pp 384–395, 2000.
17. J-C Régin, T. Petit, C. Bessière, and J-F Puget: "An Original Constraint Based Approach for Solving Over Constrained Problems", **CP'00**, Singapore, Singapore, pp 543–548, 2000.
18. J-C Régin: "Arc Consistency for Global Cardinality Constraints with costs", **CP'99**, Alexandria, VA, USA, pp 390–404, 1999.
19. C. Bessière and J-C Régin: "Enforcing arc consistency on global constraints by solving subproblems on the fly", **CP'99**, Alexandria, VA, USA, pp 103–117, 1999.
20. J-C Régin: "The Symmetric Alldiff Constraint", **IJCAI-99**, Stockholm, Sweden, pp 420–425, 1999.
21. J-C. Régin and J-F. Puget: "A filtering algorithm for global sequencing constraints", **CP'97**, Austria, pp 32–46, 1997.
22. C. Bessière and J-C. Régin: "Arc consistency for general constraint networks: preliminary results", **IJCAI-97**, Nagoya, Japan, pp 398–404, 1997.
23. C. Bessière and J-C. Régin: "MAC and Combined Heuristics: Two Reasons to Forsake FC (and CBJ?) on Hard Problems", **CP'96**, Cambridge, MA, USA, pp 61–75, 1996.
24. J-C. Régin: "Generalized Arc Consistency for Global Cardinality Constraint", **AAAI-96**, Portland, OR, USA, pp 209–215, 1996.
25. T. Schiex, J-C. Régin, C. Gaspin and G. Verfaillie: "Lazy Arc Consistency", **AAAI-96**, Portland, OR, USA, pp 216–221, 1996.
26. C. Bessière, E.C Freuder and J-C. Régin: "Using Inference to Reduce Arc Consistency Computation", **IJCAI-95**, Montréal, Canada, pp 592–598, 1995.
27. J-C. Régin: "A filtering algorithm for constraints of difference in CSPs", **AAAI-94**, Seattle, WA, USA, pp 362–367, 1994.

Invited Paper

1. P. Van Hentenryck, L. Michel, L. Perron, and J-C Régin, "Constraint Programming in OPL", **PPDP'99**, Paris, France, invited paper, pp 98–116, 1999.

Other Conferences

1. T. Petit, J-C Régin, and C. Bessière, "Meta-Constraints on violations for over-constrained problems", **ICTAI-2000**, Vancouver, Canada, pp 358–365, 2000.
2. C. Bessière and J-C Régin: "Using bidirectionality to speed-up arc-consistency processing", *Constraint Processing*, **Lecture Notes in Computer Science**, M. Meyer ed., Springer-Verlag, 923, 1995, pp 157–170.
3. C. Bessière and J-C Régin: "An arc-consistency algorithm optimal in the number of constraint checks", **ICTAI'94**, New Orleans, USA, pp 397–403, 1994.
4. J-C Régin, O. Gascuel and C. Laurenço: "Machine Learning of strategical knowledge in organic synthesis from reaction databases", *Selected papers from the First European Conference on Computational Chemistry*, Conference Proceedings 330, American Institute of Physics, Nancy, 1994, pp 618–623.
5. P. Vismara, J-C Régin, J. Quinqueton, M. Py, C. Laurenço, and L. Lapiéd: "RESYN : Un système d'aide à la conception de plan de synthèse en chimie organique", **Avignon-92**, *Les systèmes experts et leurs applications*, 12ème Journées Internationales, Avignon, France, pp 305–318, 1992.
6. A. Escousse, C. Sgro, M. Biour, J-C Régin, and V. Rigoulot: "Early Detection of Hepatic Adverse Drug Reactions by the Medical Practitioner: Microcomputerised Bank to Diagnosis", 4th World Conference on Clinical Pharmacology and Therapeutic, Mannheim Heidelberg, Germany, 1989.

International Workshops

1. P. Schaus, Y. Deville, P. Dupont, J-C Régin: "Simplification and extension of the SPREAD Constraint", **CP'06**, proceedings **workshop on Constraint Propagation and Implementation**, Nantes, p.72-92, 2006.
2. J-C Régin: "Maintaining arc consistency algorithms during the search with an optimal time and space complexity", **CP'04**, proceedings **workshop on Constraint Propagation and Implementation**, Toronto, Canada, 2004.
3. J-C Régin: "CAC: A configurable, generic and adaptive arc consistency algorithm", **CP'04**, proceedings **workshop on CP and implementation**, Toronto, Canada, 2004.
4. T. Petit, C. Bessière, and J-C Régin: "A General Conflict-Set Based Framework for Partial Constraint Satisfaction", **CP'03**, proceedings **workshop on Soft Constraints**, Kinsale, Ireland, 2003.
5. J-C Régin: "Solving the Maximum Clique Problem with Constraint Programming", **CP-AI-OR'03**, Montreal, Canada, 2003.
6. T. Petit, J-C Régin, and C. Bessière: "Range-based Algorithm for Max-CSP", **ECAI-2002**, proceedings **workshop on Modelling and Solving Problems with Constraints**, Lyon, France, 2002.
7. J-C Régin and M. Rueher: "A global constraint combining a sum constraint and binary inequalities", **IJCAI-99**, proceedings **Workshop on Non Binary Constraints**, Stockholm, Sweden, pp F:1–13, 1999.

8. J-C. Régim: "Minimization of the number of breaks in sports scheduling problems using constraint programming", proceedings **DIMACS Workshop on Constraint Programming and Large Scale Discrete Optimization**, pp P7:1–23, 1998.
9. C. Bessière and J-C. Régim: "Local Consistency on Conjunctions of Constraints", **ECAI-98**, proceedings **Workshop on Non Binary Constraints**, Brighton, England, pp 53–60, 1998.
10. C. Gaspin and J-C. Régim: "Application of maximal constraint satisfaction problems to RNA", **CP'97**, proceedings **Workshop in Bioinformatics**, Austria, 1997.
11. C. Bessière and J-C. Régim: "An arc-consistency algorithm optimal in the number of constraint checks", **ECAI'94**, proceedings **Workshop on Constraint Processing**, Amsterdam, The Netherlands, pp 9–16, 1994.

National Conferences

1. P. Schaus, Y. Deville, P. Dupont and J-C. Régim: "La Contrainte Déviation", **JFPC'07**, Rocquencourt, France, p.173-182, 2007.
2. J-C. Régim: "CAC : Un algorithme d'arc-consistance configurable, générique et adaptatif", **JNPC'04**, Angers, France, 2004.
3. T. Petit, C. Bessière, and J-C Régim: "Détection de Conflits pour la Résolution de Problèmes Sur-contraints", **JNPC'03**, Amiens, France, pp 293–308, 2003.
4. R. Bernhard, J. Chambon, C. Le Pape, L. Perron, and J-C. Régim: "Résolution d'un problème de conception de réseau avec Parallel Solver", **JFPLC'2002**, Nice, France, pp 151–166, 2002.
5. J-C. Régim, J-F. Puget, and T. Petit: "Representation of soft constraints by hard constraints", **JFPLC'2002**, Nice, France, pp 191–198, 2002.
6. T. Petit, J-C. Régim, and C. Bessière, "Algorithmes de filtrage spécifiques pour les problèmes sur-contraints", **JNPC'2001**, Toulouse, France, pp 233–246, 2001.
7. C. Bessière and J-C. Régim, "Refining the Basic Constraint Propagation Algorithm", **JFPLC 2001**, Paris, France, 2001
8. C. Fagot and J-C. Régim: "CoNNei : une méthode conceptuelle de voisinage", **JFA-96**, Journées Françaises de l'Apprentissage, Sète, France, pp 330-333, 1996.

Invited Talks

1. J-C. Régim, "How to prevent tall trees from growing to the sky", invited talk, **CSCLP 2007: Annual ERCIM Workshop on Constraint Solving and Constraint Logic Programming**, Rocquencourt, France, 2007.
2. J-C. Régim, "Alldifferent and Cardinality Constraints", **Second International Summer School on Constraint Programming**, Samos, Greece, July 2006.
3. J-C. Régim, "Global Constraints", invited tutorial, **First International Summer School on Constraint Programming**, Aquafredda di Maratea, Italy, Sept 2005.

4. J-C. Régin, "Implementation of Arc Consistency Algorithms in a Solver", invited talk, **Constraint Propagation and Implementation workshop**, CP'04, Toronto, Canada, Sept 2004.
5. J-C. Régin, "Graph Theory and Constraint Programming", invited tutorial, Master Class, **CP-AI-OR'04**, Nice, France, Avril 2004.
6. N. Beldiceanu and J-C. Régin, "Global Constraints", invited tutorial, **CP'02**, Ithaca, USA, Sept 2002.
7. J-C. Régin, "Implementation of Soft Constraints", invited talk, **TRICS workshop**, CP'02, Ithaca, USA, Sept 2002.
8. J-C. Régin, "Global Constraints", invited talk, **CP-AI-OR'02**, Le Croisic, France, May 2002.
9. J-C. Régin and B. Smith, "Modelling and Algorithmic Techniques in Constraint Programming", invited tutorial, **Dagstuhl seminar on Constraint programming and Integer programming**, 16–21 Jan 2000.

Invited Seminars

1. J-C. Régin: "General Principles of Constraint Programming", CSE Colloquium Distinguished Speaker, **Univ. Nebraska-Lincoln**, Lincoln, USA, April 2008.
2. J-C. Régin: "General Principles of Constraint Programming", Post-Graduate School of Engineering of the **Federal University of Rio de Janeiro**, Brazil, Aug 2007
3. J-C. Régin: "Using Constraint Programming to Solve the Maximum Clique Problem", Computer Science Seminar, **Brown University**, Providence, USA, May 2005
4. J-C. Régin: "General Principles of Constraint Programming", IISI Seminar, **Cornell University**, Ithaca, USA, Feb 2005
5. J-C. Régin: "Integration of OR algorithms in constraint programming", **Ecole polytechnique**, Paris, France, 2004.
6. J-C. Régin: "Principles of Constraint Programming", **Ecole Centrale**, Paris, France, 2004.
7. J-C. Régin: "Introduction à la Programmation par Contraintes", Séminaire RO, **Université de Montreal**, Montréal, Canada, May 2003
8. J-C. Régin: "Principles of Constraint Programming", private workshop organized by G. Nemhauser, **Georgia Tech University**, Atlanta, USA, May 1999.

Tutorial

1. J-C. Régin, "Modeling Problems in Constraint Programming", **CP'04**, Toronto, Canada, Sept 2004.

Oral Communications

1. J-C. Régim, "An Efficient Constraint to solve Car Sequencing Problems with Constraint Programming", **Cors/Informs 2004**, International Meeting, Banff, Canada, May 2004. Invited by A. Lody.
2. J-C. Régim, "Using Constraint Programming to solve the Maximum Clique Problem", **Cors/Informs 2004**, International Meeting, Banff, Canada, May 2004. Invited by P. Van Hentenryck.
3. J-C. Régim, "An original method to deal with distance constraints", **Cors/Informs 2004**, International Meeting, Banff, Canada, May 2004. Invited by J. Hooker.
4. J-C. Régim, "Constraint Programming and Sports League Scheduling", **Cors/Informs 2004**, International Meeting, Banff, Canada, May 2004. Invited by M. Trick.
5. C. Gomes, J-C. Régim, "Modelling Alldiff matrix models in Constraint Programming", **Optimization days**, Montreal, Canada, May 2003.
6. J-C. Régim, "Combination of Cardinality and Sequence Constraints", **Optimization days**, Montreal, Canada, May 2003.
7. T. Petit, J-C. Régim, and C. Bessière, "Generalization of constructive disjunction for over-constrained problems", **Informs**, Miami, Floride, Nov. 2001. Invited by G. Pesant.
8. T. Petit and J-C. Régim, "An original constraint based approach for solving over constrained problems", **ISMP**, Aug 2000, Atlanta.
9. J-C. Régim and J-F. Puget, "Solving Car Sequencing Problems with Constraint Programming", **ISMP**, Aug 2000, Atlanta. Invited by M. Junger.
10. J-C. Régim, "Constraint Programming and Sports Scheduling Problems", **Informs**, May 1999, Cincinnati. Invited by M. Trick.
11. J-C. Régim, "Flow Theory and Constraint Programming", **Informs**, May 1999, Cincinnati. Invited by K. McAloon.
12. J-C. Régim, "Modeling and Solving Sports League Scheduling with Constraint Programming", **Informs**, April 1998, Montreal. Invited by K. McAloon.
13. J-C. Régim, "Intérêt de la théorie des flots en programmation par contraintes", **1er congrès ROADEF**, Paris, Jan. 1998. Invited by Y. Caseau.