

Curriculum Vitae

Cătălin Dima

Poziție actuală și afiliere

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Laboratoire d'Algorithmique, Complexité et Logique (LACL),
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Doctorat in Informatică

- Instituție organizatoare: Université Joseph Fourier Grenoble.
- Titlu: *Théorie algébrique des langages formels temps-réel*.
- Data obținerii: 11 decembrie 2001.
- Conducatori de doctorat: Eugène Asarin, Oded Maler (Vérimag Grenoble).
- Raportori: Paul Gastin (LIAFA, U. Paris 7), Nils Klarlund (AT&T Labs Research).
- Examinatori: P. S. Thiagarajan (NUS Singapour), Pascal Weil (LaBRI, CNRS), Jean-Claude Fernandez (UJF Grenoble).

Abilitare de conducere a doctoratelor in Informatică

- Instituție organizatoare: Université Paris-Est Créteil Val-de-Marne.
- Titlu: *Automates et logique pour la vérification des systèmes temps réel et multi-agents*.
- Data obținerii: 6 décembre 2010.
- Promotor abilitare: Anatol Slissenko.
- Raportori: François Laroussinie (LIAFA, U. Paris Diderot – Paris 7), Wojciech Penczek (Institute of Computer Science, Polish Academy of Sciences – IIPAN), Pierre-Yves Schobbens (FUNDP Namur, Belgique).
- Examinatori: Philippe Balbiani (IRIT Toulouse), Marie-Pierre Béal (LIGM, U. Marne-la-Vallée), Véronique Bruyère (U. Mons, Belgium).

Cariera profesională

- [Din septembrie 2011] Professeur des Universités (Full Professor), Faculté des Sciences et Technologie, Université Paris-Est Créteil (UPEC).
- [Între februarie 2004 – august 2011] Maître de Conférences (Associate Professor), Faculté des Sciences et Technologie, Université Paris-Est Créteil.
- [Între septembrie 2002 – august 2003] ATER (Attaché Temporaire d'Enseignement et de Recherche), École Normale Supérieure d'Électronique, Informatique et Robotique de Bordeaux (ENSEIRB) & Laboratoire Bordelais de Recherche en Informatique (LaBRI).
- [Între septembrie 2001 – august 2002] ATER, Université Joseph Fourier Grenoble.
- [Între noiembrie 1999 – septembrie 2001] Doctorand cu bursa Egide, INRIA Rhône-Alpes și Vérimag, laborator de cercetare comun CNRS și Université Joseph Fourier Grenoble.

- [Între septembrie 1998 – noiembrie 1999] Asistent, Catedra de Fundamentele Informaticii, Facultatea de Matematică, Universitatea București.
- [Între septembrie-decembrie 1998] UNU/IIST Fellow, Tata Institute for Fundamental Research (TIFR), Mumbai, India.
- [Între februarie-august 1998] UNU/IIST Fellow, United Nations Institute for Software Technology, Macau SAR, China.
- [Între septembrie 1995 – august 1998] Preparator, Catedra de Fundamentele Informaticii, Facultatea de Matematică, Universitatea București.

Responsabilități de cercetare și administrative

- *Din septembrie 2018* : Prodecan, Faculté des Sciences et Technologie, Université Paris-Est Créteil.
- *Din septembrie 2011* : Șeful echipei de cercetare *Spécification et Vérification des Systèmes* din cadrul Laboratoire d'Algorithmique, Complexité et Logique (LACL), Université Paris-Est Créteil, echipă compusă din 19 de cercetatori permanenți, profesori ai UPEC.
- *Între septembrie 2014 – septembrie 2018* : Șeful Departamentului de Informatică, Faculté des Sciences et Technologie, Université Paris-Est Créteil.

Conducere de doctorate

1. Constantin Enea, *Abstraction techniques for the verification of concurrent systems*, teză susținută în 8 ianuarie 2008 în co-tutelă între UPEC și Universitatea din Iași, conducător de doctorat din partea Universității din Iași: Ferucio Țiplea.
2. Dimitris Vekris, *Vérification de Spécifications EB-3 à l'aide de Techniques de Model Checking*, teză susținută în 10 decembrie 2014.
3. Rodica Bozianu, *Synthesis of reactive interactive systems*, teză susținută în 12 decembrie 2016 în co-tutelă între UPEC și Université Libre de Bruxelles, conducător de doctorat din partea Université Libre de Bruxelles: Emmanuel Filiot.

Contracte de cercetare

1. Proiect ANR EQINOCS no. ANR-11-BS02-004, 2011-2016, responsabil de echipă, buget: 130000 euro.
2. Proiect DIM RFSI MALEVEPS, 2018-2019, buget 9500 euro.
3. Proiect DIM RFSI BIATLON, 2019-2020, buget 11000 euro.
4. Proiect PHC Brâncusi, 2013-2014, partener Universitatea din Iași, buget 10000 euro.

Publicații

În reviste internaționale

1. Francesco Belardinelli, Rodica Condurache, Cătălin Dima, Wojciech Jamroga, Michal Knapik: Bisimulations for Verifying Strategic Abilities with an Application to the ThreeBallot Voting Protocol, to appear in *Information and Computation*.
2. Catalin Dima, Bastien Maubert, Sophie Pinchinat: Relating Paths in Transition Systems: The Fall of the Modal Mu-Calculus, *ACM Transactions on Computational Logic*, vol 19(3), p.23:1–23:33, 2018.
3. Dimitris Vekris, Frédéric Lang, Catalin Dima, Radu Mateescu: Verification of EB3 specifications using CADP. *Formal Aspects of Computing*, vol. 28(1), p.145-178, 2016.

4. Marie-Pierre Béal, Michel Blockelet, Catalin Dima: Sofic-Dyck shifts. *Theoretical Computer Science* vol 609, p.226–244, 2016.
5. C. Dima. A Nonarchimedean Discretization for Timed Languages. *Fundamenta Informaticae*, vol 131, p. 1–19, 2014.
6. C. Dima, R. Lanotte. A study on shuffle, stopwatches and independently evolving clocks. *Distributed Computing*, vol. 25, issue 1. p. 5-33, 2012.
7. R. Diaconu, C. Dima. Model-Checking Alternating-Time Temporal Logic with Strategies Based on Common Knowledge is Undecidable. *Applied Artificial Intelligence* vol. 26, issue 4, p. 331-348, 2012.
8. D. Guelev, C. Dima, C. Enea. An Alternating-time Temporal Logic with Knowledge, Perfect Recall and Past: Axiomatisation and Model-checking, *Journal of Applied Non-classical Logics*, special issue on *Logical Aspects of Multi-Agent Systems*, vol. 21, no. 1, p. 93-131, 2011.
9. C. Dima. Non-axiomatizability for the linear temporal logic of knowledge with concrete observability. *Journal of Logic and Computation*, vol. 21, issue 6, p. 939-958, 2011.
10. E. Asarin, C. Dima. On the computation of covert channel capacity. *RAIRO-Informatique Théorique et Applications*, vol. 44, no. 1, p. 37–58, 2010.
11. C. Enea, C. Dima. Abstractions of multi-agent systems, dans *International Transactions on Systems Science and Applications*, Vol. 3, No. 4, p. 329–337, 2008.
12. E. Asarin, C. Dima. Balanced timed regular expressions, dans *Electronic Notes in Theoretical Computer Science*, vol. 68, issue 5, 2002.
13. C. Dima. Automata and Regular Expressions for Real-Time Languages, dans *Publ. Math. Debrecen*, vol 60, *Supplementum: Proceedings of AFL'99*, p. 523–538, 2002.
14. C. Dima. Real-Time Automata, dans *Journal of Automata, Languages and Combinatorics*, vol. 6, p. 3–23, 2001.

În proceedings de conferințe internaționale

15. Francesco Belardinelli, Ioana Boureanu, Cătălin Dima, Vadim Malvone: Verifying Strategic Abilities in Multi-agent Systems with Private Data-Sharing. *Proceedings of the 18th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS 2019)*, p. 1820-1822, ACM Press, 2019.
16. Francesco Belardinelli, Cătălin Dima, Aniello Murano: Bisimulations for Logics of Strategies: A Study in Expressiveness and Verification, *Proceedings of the 16th International Conference on Principles of Knowledge Representation and Reasoning (KR'2018)*, p.425-434, AAAI Press, 2018.
17. Rodica Bozianu, Francesco Belardinelli, Cătălin Dima, Wojtek Jamroga, Andrew Jones: Bisimulations for Verifying Strategic Abilities Applied to a Voting Protocol, *Proceedings of the 16th International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'2017)*, p.1286-1295, ACM Press, 2017.
18. Eugene Asarin, Julien Cervelle, Aldric Degorre, Cătălin Dima, Florian Horn, and Victor Kozyakin: Entropy Games and Matrix Multiplication Games, *Proceedings of the 33rd International Symposium on Theoretical Aspects of Computer Science (STACS'2016)*, p.11:1-11:14, LIPIcs, Schloss Dagstuhl, 2016.
19. Cătălin Dima, Bastien Maubert, Sophie Pinchinat: Relating Paths in Transition Systems: The Fall of the Modal Mu-Calculus. *Proceedings of the 40th International Symposium in Mathematical Foundations of Computer Science (MFCS'2015)*, p. 179-191, Lecture Notes in Computer Science vol. 9234, Springer Verlag, 2015.
20. M.-P. Béal, M. Blockelet, C. Dima: Sofic-Dyck Shifts, dans *Proceedings of 39th International Symposium in Mathematical Foundations of Computer Science (MFCS'2014)*, p. 63-74, Lecture Notes in Computer Science vol. 8634, Springer Verlag, 2014.

21. R. Bozianu, C. Dima, Emmanuel Filiot: Safraless Synthesis for Epistemic Temporal Specifications, dans *Proceedings of 26th International Conference on Computer-Aided Verification (CAV'2014)*, p. 441-456, Lecture Notes in Computer Science vol. 8559, Springer Verlag, 2014.
22. E. Asarin, M. Blockelet, A. Degorre, C. Dima, C. Mu: Asymptotic behaviour in temporal logic, *Proceedings of the Joint Meeting of the 23rd EACSL Annual Conference on Computer Science Logic (CSL) and the 29th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS) (CSL-LICS'14)*, p. 10:1–10:9, ACM Press, 2014.
23. D. Vekris, Fr. Lang, C. Dima, R. Mateescu: Verification of EB3 Specifications Using CADP, dans *Proceedings of the 10th International Conference on Integrated Formal Methods (IFM 2013)*, Lecture Notes in Computer Science vol. 7940, p. 61–76, 2013.
24. D. Vekris, C. Dima, Efficient Operational Semantics for for Verification of Temporal Properties. dans *Revised selected papers of the 5th IPM International Conference on Fundamentals of Software Engineering (FSEN 2013)*, Lecture Notes in Computer Science vol. 8161, p. 133–149, 2013.
25. R. Bozianu, C. Dima, C. Enea. Model-checking an Epistemic μ -calculus with Synchronous and Perfect Recall Semantics, *Proceedings of the 14th Conference on Theoretical Aspects of Rationality and Knowledge (TARK'13)*, p. 176–186, 2013.
26. D. Guelev and C. Dima, Epistemic ATL with Perfect Recall, Past and Strategy Contexts, *Proceedings of 13th International Workshop on Computational Logic in Multi-Agent Systems (CLIMA'12)*, Lecture Notes in Artificial Intelligence vol. 7486, p. 77–93, Springer Verlag, 2012.
27. C. Dima, C. Enea and D. Guelev, Model-Checking an Alternating-time Temporal Logic with Knowledge, Imperfect Information, Perfect Recall and Communicating Coalitions, *Proceedings of 1st International Symposium in Games, Automata, Logic and Formal Verification (GandALF'2010)*, *Electronic Proceedings in Theoretical Computer Science* vol. 25, p. 103–117, 2010.
28. C. Dima, R. Lanotte. Removing all silent transitions from timed automata, dans *Proceedings of the 7th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS 2009)*, Lecture Notes in Computer Science, vol. 5813, p. 118–132, Springer Verlag, 2009.
29. C. Dima. Positive and negative results on the decidability of the model-checking problem for an epistemic extension of Timed CTL, dans *Proceedings of the 16th International Symposium on Temporal Representation and Reasoning (TIME-2009)*, p. 29–36, IEEE Computer Society Press, 2009.
30. C. Dima. Revisiting satisfiability and model-checking for CTLK with synchrony and perfect recall, *Proceedings of the 9th International Workshop on Computational Logic in Multi-Agent Systems (CLIMA 2008)*, Lecture Notes in Artificial Intelligence vol. 5405, p. 117–131, Springer Verlag, 2009.
31. D. Guelev, C. Dima. Model-checking strategic ability and knowledge of the past of communicating coalitions, dans *Proceedings of 6th International Workshop on Declarative Agent Languages and Technologies (DALT 2008)*, Lecture Notes in Computer Science vol. 5397, p. 75–90, Springer Verlag, 2009.
32. C. Enea, C. Dima. Abstractions of multi-agent systems, dans *Proceedings of 5th International Central and Eastern European Conference on Multi-Agent Systems (CEEMAS'2007)*, September 25-27, 2007, Leipzig, Germany, Lecture Notes in Computer Science vol. 4696, p. 11–21, Springer Verlag, 2007.
33. C. Dima, R. Lanotte. Distributed time-asynchronous automata, dans *Proceedings of the 4th International Colloquium on Theoretical Aspects of Computing (ICTAC 2007)*, September 26-28, 2007, Macau SAR, China, Lecture Notes in Computer Science vol. 4711, p.185–200, Springer Verlag, 2007.
34. C. Dima, C. Enea, R. Gramatovici, A. Sofronia. Nondeterministic Noninterference and Deducible Information Flow, dans *Proceedings of the 9th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC'2007)*, p. 33–40, IEEE Computer Society Press, 2007.

35. C. Dima, Dynamical properties of timed automata revisited, dans *Proceedings of the 5th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS'2007)*, October 3-5, 2007, Salzburg, Austria, Lecture Notes in Computer Science vol. 4763, p. 130–146, Springer Verlag, 2007.
36. C. Dima, C. Enea. Nondeducibility on strategies in the temporal logic of knowledge, dans *Preliminary Proceedings of 7th International Workshop on Issues in the Theory of Security (WITS'2007)*, Braga, Portugal, p. 69–84, 2007.
37. C. Dima, Timed shuffle expressions, dans *Proceedings of the 16th International Conference on Concurrency Theory (Concur'05)*, Lecture Notes in Computer Science vol. 3653, p. 95–109, Springer Verlag, 2005.
38. C. Dima, A. Girault, Y. Sorel. Static fault-tolerant real-time scheduling with pseudo-topological orders, dans *Proceedings of the Joint International Conference on Formal Modelling and Analysis of Timed Systems (Formats'04) and Formal Techniques for Real-Time and Fault-Tolerant Systems (FTRTFT'04)*, Lecture Notes in Computer Science vol 3253, p. 215–230, Springer Verlag, 2004.
39. C. Dima. A nonarchimedean discretization for timed languages, dans *Proceedings of the 1st International Workshop on Formal Modeling and Analysis of Timed Systems (FORMATS'03)*, Lecture Notes in Computer Science vol. 2791, p. 168–181, Springer Verlag, 2004.
40. C. Dima. Timed regular expressions with colored parentheses, dans *4th International Conference on Discrete Mathematics and Theoretical Computer Science (DMTCS'2003)*, Lecture Notes in Computer Science vol. 2731, p. 141–154, Springer Verlag, 2003.
41. C. Dima. Computing the reachability relation in timed automata, dans *Proceedings of the 17th Annual IEEE Symposium on Logic in Computer Science (LICS'02)*, p. 177–186, IEEE Computer Society Press, 2002.
42. E. Asarin, C. Dima. Balanced timed regular expressions, dans *Proceedings of the 3rd International Workshop on Models for Time-Critical Systems, (MTCS'02)*, Brno, Czech Republic, August 2002, p. 17–32.
43. C. Dima, A. Girault, C. Lavarenne and Y. Sorel. Off-line real-time fault-tolerant scheduling, dans *Proceedings of 9th Euromicro Workshop on Parallel and Distributed Processing (PDP'2001)*, p. 410–417, IEEE Computer Society Press, 2001.
44. C. Dima. Real-time automata and the Kleene algebra of sets of real numbers, dans *Proceedings of 17th International Symposium on Theoretical Aspects of Computer Science (STACS'2000)*, Lecture Notes in Computer Science vol. 1770, p. 279–289, Springer Verlag, 2000.
45. C. Dima. Kleene theorems for event-clock automata, dans *Proceedings of the 13th International Symposium on Fundamentals of Computation Theory (FCT'99)*, Lecture Notes in Computer Science vol. 1684, p. 215–225, Springer Verlag, 1999.
46. C. Dima. Automata and regular expressions for real-time languages, dans *Proceedings of the 9th International Conference on Automata and Formal Languages (AFL'99)*, Vasszeczyeny, Hongrie, August 1999.

În colecții de articole

47. C. Dima, A class of automata for computing reachability relations in timed systems, dans *Proceedings of the NATO Advanced Research Workshop on the Verification of Infinite State Systems with Applications to Security (VISSAS'05)*, NATO Science Series: Computer & Systems Series, vol. 195, p.69–89, IOS Press, 2005.
48. C. Dima. Distributed Real-Time Automata, dans C. Martin-Vide & V. Mitrana (ed.), *Grammars and Automata for String Processing: from Mathematics and Computer Science to Biology, and Back*, Taylor and Francis Publishers, p. 131–140, 2003.

În reviste de audiență națională

49. C. Dima, C. Enea. Nondeducibility on Strategies in the Temporal Logic of Knowledge. *Mathematica Balkanica*, Vol. 25, Fasc. 3, p. 219–240, 2011.
50. C. Dima. Relating Signals and Timed Traces. *Analele Universității București*, secțiunea Matematică–Informatică, vol. **XLVIII**, p. 79–89, 1999.
51. C. Dima. Representation of Some Particular Matrix Theories, dans *Analele Universității București*, secțiunea Matematică–Informatică, vol. **XLVI**, p. 35–61, 1997.

Rapoarte tehnice

52. R. Bozianu, C. Dima, C. Enea. Model-checking an Epistemic μ -calculus with Synchronous and Perfect Recall Semantics, Raport tehnic, LACL, <http://arxiv.org/abs/1204.2087>, 2012.
53. C. Dima, F. Țiplea, Model-checking ATL under imperfect information and perfect recall semantics is undecidable, Raport tehnic, LACL, <http://arxiv.org/abs/1102.4225> 2010.
54. C. Dima, R. Lanotte. Removing all silent transitions from timed automata, Raport tehnic, LACL, no. TR-2009-06.
55. C. Dima, Positive and negative results on the decidability of the model-checking problem for an epistemic extension of Timed CTL, Raport tehnic, LACL no. TR-2009-05.

În proceedings de workshopuri sau conferințe de anvergură mică

56. Catalin Dima, Bastien Maubert, Sophie Pinchinat: Relating Paths in Transition Systems: the Fall of the Modal μ -Calculus. *The 17th Italian Conference on Theoretical Computer Science (ICTCS 2016)*, Lecce, p.240-244.
57. Marie-Pierre Béal, Michel Blockelet, Catalin Dima: Zeta functions of finite-type-Dyck shifts are N-algebraic. *Proceedings of Information Theory and Applications Workshop 2014 (San Diego)*, p.1-8, 2014.
58. R. Bozianu, C. Dima, C. Enea. Model-checking an Epistemic μ -calculus with Synchronous and Perfect Recall Semantics, *Proceedings of 14th Mons Days of Theoretical Computer Science (JM'2010)* Université catholique de Louvain, Belgique, 11-14 septembrie 2012, 8 pagini.
59. Raluca Diaconu and Catalin Dima, Model-Checking Alternating-time Temporal Logic with Strategies Based on Common Knowledge Is Undecidable, *Proceedings of 8th European Workshop on Multi-Agent Systems (EUMAS'2010)*, 16-17 decembrie 2010, 14 pagini.
60. Catalin Dima, Constantin Enea, Dimitar Guelev and Ferucio Tiplea. Positive and negative results on the model-checking problem for ATL with imperfect information, *2nd Workshop on Games for Design, Verification and Synthesis (GASICS'2010)*, Paris, 4 septembrie 2010, 2 pagini.
61. E. Asarin, C. Dima. On the computation of covert channel capacity. *Actes des Journées Montoises 2008*, 27-30 August 2008, 15 pagini.
62. C. Dima, On timed regular languages defined by inverse monoid morphisms. *Proceedings of the CAVIS Workshop (Computer-Aided Verification of Information Systems)*, colloque satellite du 6th International Symposium on Symbolic and Numeric Computation (Synasc'04), Timisoara, Romania, p. 439–450, 2004.
63. C. Dima. A fixpoint semantics for “memory cells” in synchronous dataflows. *Proceedings of 2nd Workshop on Fixed Points in Computer Science (FICS'2000)*, Paris, Iulie 2000, p. 21–23.

64. C. Dima. Removing epsilon transitions from event-clock automata, *Proceedings of the National Conference on Theoretical Computer Science and Information Technology*, Constanța, Romania, Mai 2000, p. 75–81.
65. C. Dima. Automata for a decidable subset of Duration Calculus, *Proceedings of 3rd International Conference on Economic Informatics (IE'99)*, section *Algebra of informatics and applications*, Bucharest, Romania, Mai 1999, p. 930–937.

Conferințe invitate

66. M.-P. Béal, M. Blockelet, and C. Dima. Sofic-Dyck shifts, *Workshop on Flow Equivalence of Graphs, Shifts and C^* -algebras*, Univ. Copenhagen, Noieembrie 2013.
67. M.-P. Béal, M. Blockelet, and C. Dima, Zeta functions of finite-type-Dyck shifts are N-algebraic, *Information Theory and Applications Workshop*, (ITA 2014), San Diego, Februarie 2014.