

Work Address

Institute of Science and Technology (IST), Austria
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Home Address

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A-3400, Austria
e-mail: krish.chat@gmail.com

Krishnendu Chatterjee

Homepage: <http://pub.ist.ac.at/~kchatterjee>

**Personal
Information**

Year of Birth: 1978
Nationality: Indian

Education

- *Doctorate (PhD) in Computer Science* (Dec 2007)
University of California, Berkeley.
- *MS in Computer Science* (May 2004)
University of California, Berkeley
- *Bachelor of Technology (B.Tech (Hons.)) -Computer Science and Engineering,*
Indian Institute of Technology (IIT) - Kharagpur, India.
- *Higher Secondary Education : St. Xaviers College, Calcutta,India*
- *Secondary Education : Orient Day School, Calcutta, India*

**Research
Interests**

- Verification and control of reactive systems.
- Probabilistic model checking.
- Stochastic game theory.
- Application of formal methods and games for reliable systems.
- Game theory in logic, automata theory and verification.
- Reputation and trust management system for Wikipedia.
- Evolutionary game theory.

**PhD
Thesis**

- “*Stochastic ω -Regular Games*” under the supervision of Prof. Thomas A. Henzinger, at UC, Berkeley (thesis defended in 2007). It won the David J. Sakrison award from UC Berkeley for outstanding research, and Ackermann award from EACSL for outstanding dissertation in computer science logic.

**Academic
Employment**

- Professor at Institute of Science and Technology, Austria (IST Austria) (from April 2014–present).
- Assistant Professor at Institute of Science and Technology, Austria (IST Austria) (from June 2009–March 2014).
- Post-doctoral researcher with Prof. Luca de Alfaro at UC, Santa Cruz (from Feb 2008–to May 2009).

Research Group

Current group

1. Djordje Zikelic (PhD student).
2. Amir Kafshdar Goharshady (PhD student).
3. Laura Schmid (PhD student).
4. Viktor Toman (PhD student).
5. Ismael Jacker (Postdoc, ISTPlus Fellow).
6. Maria Kleshnina (Postdoc, ISTPlus Fellow).
7. Mingzhang Huang (Postdoc, ISTPlus Fellow).

Alumni: PhD Students

1. Johannes Reiter [Johannes Ritschl Dissertation Prize, Lower Austria, Schrodinger Fellowship].
2. Martin Chmelik [Outstanding PhD Thesis, IST Austria].
3. Andreas Pavlogiannis [Schrodinger Fellowship].
4. Josef Tkadlec.

Alumni: Postdoc

1. Florian Horn.
2. Mathieu Tracol.
3. Sasha Rubin.
4. Benjamin Aminof.
5. Jan Kretinsky [IST Fellow].
6. Tadeas Priklopil [IST Fellow, joint with Nick Barton].
7. Hongfei Fu.
8. Ventsislav Chonev.
9. Rasmus Ibsen-Jensen.
10. Petr Novotny [IST Fellow].
11. Christian Hilbe [IST Fellow].

Academic Awards and Honors

1. **ERC Consolidator Grant** in 2019 awarded by European Research Council.
2. **ERC Start Grant** in 2011 awarded by European Research Council.
3. **Microsoft Faculty Fellowship Award** in 2011 for outstanding young faculty in computer science awarded by Microsoft Research.
4. **Golden Chalk Award** in June 2016 for teaching excellence at IST Austria
5. **Ackermann Award** in 2008 for PhD Thesis awarded by European Association of Computer Science Logic (EACSL) for “Outstanding Dissertation Award for Logic in Computer Science”, 2008.
6. **David J. Sakrison Memorial Prize** for PhD Thesis (awarded annually for a “truly outstanding and innovative piece of research documented in written form”), University of California, Berkeley, 2008.
7. **President of India Gold Medal** (most prestigious academic award in IIT) in the batch of 2001 for being the best student *in order of merit* among students of all B. Tech (Hons) and B. Arch courses in *IIT, Kharagpur*.
8. *Institute Silver Medal* for the academic year 2000-2001 for being adjudged the *best student* in order of merit among students graduating with B. Tech (Hons) degree in Computer Science and Engineering.

**Professional
Activities**

PC Member

1. FOSSACS 2010.
2. LICS 2010.
3. CSL 2010.
4. GANDALF 2010.
5. FOSSACS 2011.
6. GANDALF 2011.
7. FSTTCS 2011.
8. FORMATS 2011.
9. Formal Methods (FM) 2012.
10. MOVEP 2012.
11. FORMATS 2012.
12. MFCS 2012.
13. MEMICS 2012.
14. FOSSACS 2013.
15. TASE 2013.
16. CONCUR 2013.
17. RP 2013.
18. Highlights 2013.
19. LPAR-19 2013.
20. HSCC 2014.
21. LICS 2014.
22. CSL 2014.
23. EATCS Summer School.
24. QAPL 2014.
25. Strategic Reasoning 2014 (SR 2014).
26. MOVEP 2014.
27. Formal Methods Integration Workshop (FMi 2014).
28. HSCC 2015.
29. FOSSACS 2015.
30. CAV 2015.
31. QAPL 2015.
32. RP (Reachability problems) 2015.
33. FMi 2015.
34. GANDALF 2015.
35. Highlights 2015.
36. FORMATS 2015.
37. Strategic Reasoning (SR) 2015.
38. MEMICS 2015.
39. FICS 2015.
40. POPL 2016 ERC.

41. LPAR-20, 2016.
42. TACAS 2016.
43. HSCC 2016.
44. ICALP 2016 Track C.
45. MOVEP 2016.
46. ATVA 2016.
47. RP 2016.
48. SR 2016.
49. GANDALF 2016.
50. FSTTCS 2016.
51. POPL 2017 ERC.
52. ICAPS 2017.
53. ICALP 2017 Track B.
54. MoRE 2018.
55. RP 2018.
56. FSTTTCS 2018.
57. LATA 2019.
58. ICALP 2019 Track B.
59. QEST 2019.
60. ATVA 2019.
61. RADICAL 2019.
62. GAMENET POSTER Selection 2019.
63. CSL 2020.
64. ATVA 2020 (Upcoming).
65. MFCS 2020 (Upcoming).

PC Chair

1. FORMATS 2010.
2. GPMFV Workshop 2010.
3. MFCS 2013.
4. SYNT 2014.

Editorial Board

1. IPL (Information Processing Letters).
2. I&C (Information and Computation).

Conference and Workshop Organization

1. FORMATS 2010.
2. GPMFV Workshop 2010.
3. AVM Meeting and ARiSE Kick-off 2011.
4. Dagstuhl workshop: Games and Decisions for Rigorous Systems Engineering.

5. RiSE Winter School 2013.
6. MFCS 2013.
7. LICS 2014 Local chair.
8. SYNT 2014.
9. Dagstuhl workshop: Non-zero sum games.

Publications Conferences and Workshops

1. *Stochastic Games with Lexicographic Reachability-Safety Objectives*
Krishnendu Chatterjee, Joost-Pieter Katoen, Maximilian Weisinger, and Tobias Winkler.
CAV, 2020.
2. *Approximating Values of Generalized-Reachability Stochastic Games*
Pranav Ashok, Krishnendu Chatterjee, Jan Kretinsky, Maximilian Weisinger, and Tobias Winkler.
LICS, 2020.
3. *Polynomial Invariant Generation for Non-deterministic Recursive Programs*
Krishnendu Chatterjee, Hongfei Fu, Amir Kafshdar Goharshady, Ehsan Kafshdar Goharshady.
PLDI, 2020.
4. *Multiple-Environment Markov Decision Processes: Efficient Analysis and Applications*
Krishnendu Chatterjee, Martin Chmelik, Deep Karkhanis, Petr Novotny, Amelie Royer.
ICAPS, 2020.
5. *Optimal and Perfectly Parallel Algorithms for On-demand Data-flow Analysis*
Krishnendu Chatterjee, Amir Kafshdar Goharshady, Rasmus Ibsen-Jensen, Andreas Pavlogiannis.
ESOP, 2020.
6. *Reinforcement Learning of Risk-Constrained Policies in Markov Decision Processes*
Tomas Brazdil, Krishnendu Chatterjee, Petr Novotny, Jiri Vahala.
AAAI, 2020.
7. *Proving Expected Sensitivity of Probabilistic Programs with Randomized Variable-Dependent Termination Time*
Peixin Wang, Hongfei Fu, Krishnendu Chatterjee, Yuxin Deng, Ming Xu.
POPL, 2020.
8. *The Evolutionary Price of Anarchy: Locally Bounded Agents in a Dynamic Virus Game*
Laura Schmid, Krishnendu Chatterjee, and Stefan Schmid.
OPODIS, 2019.
9. *Value-centric Dynamic Partial Order Reduction*
Krishnendu Chatterjee, Andreas Pavlogiannis, and Viktor Toman.
OOPSLA, 2019.
10. *Modular Verification for Almost-sure Termination of Probabilistic Programs*
Mingzhang Huang, Hongfei Fu, Krishnendu Chatterjee, and Amir Kafshdar Goharshady.
OOPSLA, 2019.
11. *Deciding Fast Termination for Probabilistic VASS with Nondeterminism*
Tomas Brazdil, Krishnendu Chatterjee, Antonin Kucera, Petr Novotny, and Dominik Velan.
ATVA, 2019.

12. *Combinations of Qualitative Winning for Stochastic Parity Games*
Krishnendu Chatterjee and Nir Piterman.
CONCUR 2019.
13. *Near-linear time algorithms for Streett objectives in Graphs and MDPs*
Krishnendu Chatterjee, Wolfgang Dvorak, Monika Henzinger, and Alexander Svozil.
CONCUR 2019.
14. *Long-Run Average Behavior of Vector Addition Systems with States*
Krishnendu Chatterjee, Thomas A. Henzinger, and Jan Otop.
CONCUR 2019.
15. *Strategy Representation by Decision Trees with Linear Classifiers*
Pranav Ashok, Tomas Brazdil, Krishnendu Chatterjee, Jan Kretinsky, Christoph H. Lampert, and Viktor Toman.
QEST 2019.
16. *Graph Planning with Expected Finite Horizon*
Krishnendu Chatterjee and Laurent Doyen.
LICS 2019.
17. *Cost Analysis of Nondeterministic Probabilistic Programs*
Peixin Wang, Hongfei Fu, Amir Kafshdar Goharshady, Krishnendu Chatterjee, Xudong Qin, and Wenjun Shi.
PLDI 2019.
18. *Run-Time Optimization for Learned Controllers through Quantitative Games*
Guy Avni, Roderick Bloem, Krishnendu Chatterjee, Thomas A. Henzinger, Bettina Koenighofer and Stefan Pranger.
CAV 2019.
19. *Probabilistic Smart Contracts: Secure Randomness on the Blockchain*
Krishnendu Chatterjee, Amir K. Goharshady, and Arash Pourdamghani.
IEEE ICBC, 2019.
20. *The Treewidth of Smart Contracts*
Krishnendu Chatterjee, Amir Kafshdar Goharshady, and Ehsan Kafshdar Goharshady.
ACM SAC, 2019.
21. *Hybrid Mining: Exploiting Blockchain's Computational Power for Distributed Problem Solving*
Krishnendu Chatterjee, Amir K. Goharshady, and Arash Pourdamghani.
ACM SAC, 2019.
22. *Termination of Nondeterministic Probabilistic Programs*
Hongfei Fu and Krishnendu Chatterjee.
VMCAI, 2019.
23. *Efficient Parameterized Algorithms for Data Packing*
Krishnendu Chatterjee, Amir Kafshdar Goharshady, Nastaran Okati and Andreas Pavlogiannis
POPL, 2019.
24. *Quasipolynomial Set-Based Symbolic Algorithms for Parity Games*
Krishnendu Chatterjee, Wolfgang Dvorak, Monika Henzinger and Alexander Svozil
LPAR-22, 2018.
25. *New Approaches for Almost-Sure Termination of Probabilistic Programs*
Mingzhang Huang, Hongfei Fu, and Krishnendu Chatterjee.
APLAS, 2018.
26. *Ergodic Mean-Payoff Games for the Analysis of Attacks in Crypto-Currencies*
Krishnendu Chatterjee, Amir Kafshdar Goharshady, Rasmus Ibsen-Jensen, and Yaron

- Velner.
CONCUR, 2018.
27. *Parameter-Independent Strategies for pMDPs via POMDPs*
 Sebastian Arming, Ezio Bartocci, Krishnendu Chatterjee, Joost-Pieter Katoen and Ana Sokolova.
QEST, 2018.
 28. *Secure Credit Reporting on the Blockchain*
 Amir Kafshdar Goharshady, Ali Berhouz, and Krishnendu Chatterjee.
IEEE BlockchainApp, 2018.
 29. *Expectation Optimization with Probabilistic Guarantees in POMDPs with Discounted-Sum Objectives*
 Krishnendu Chatterjee, Adrian Elgyutt, Petr Novotny, and Owen Rouille.
IJCAI, 2018.
 30. *Goal-HSVI: Heuristic Search Value Iteration for Goal POMDPs*
 Karel Horak, Branislav Bosansky, and Krishnendu Chatterjee.
IJCAI, 2018.
 31. *Computational Approaches for Stochastic Shortest Path on Succinct MDPs*
 Krishnendu Chatterjee, Hongfei Fu, Amir Kafshdar Goharshady, and Nastaran Okati.
IJCAI, 2018.
 32. *Symbolic Algorithms for Graphs and Markov Decision Processes with Fairness Objectives*
 Krishnendu Chatterjee, Monika Henzinger, Veronika Loitzenbauer, Simin Oraee and Viktor Toman.
CAV, 2018.
 33. *Efficient Algorithms for Asymptotic Bounds on Termination Time in VASS*
 Tomas Brazdil, Krishnendu Chatterjee, Antonin Kucera, Petr Novotny, Dominik Velan and Florian Zuleger.
LICS, 2018.
 34. *Sensor Synthesis for POMDPs with Reachability Objectives*
 Krishnendu Chatterjee, Martin Chmelik, and Ufuk Topcu.
ICAPS, 2018.
 35. *Algorithms and Conditional Lower bounds for Planning Problems*
 Krishnendu Chatterjee, Wolfgang Dvorak, Monika Henzinger, and Alexander Svozil.
ICAPS, 2018.
 36. *Quantitative Analysis of Smart Contracts*
 Krishnendu Chatterjee, Amir Kafshdar Goharshady, and Yaron Velner
ESOP, 2018.
 37. *Strategy Representation by Decision Trees in Reactive Synthesis*
 Tomas Brazdil, Krishnendu Chatterjee, Jan Kretinsky, and Viktor Toman
TACAS, 2018.
 38. *Lower Bounds for Symbolic Computation on Graphs: Strongly Connected Components, Liveness, Safety, and Diameter*
 Krishnendu Chatterjee, Wolfgang Dvorak, Monika Henzinger, and Veronika Loitzenbauer
SODA, 2018.
 39. *Optimal Dyck Reachability for Data-dependence and Alias Analysis*
 Krishnendu Chatterjee, Bhavya Choudhary, and Andreas Pavlogiannis.
POPL, 2018.
 40. *Lexicographic Ranking Supermartingales: An Efficient Approach to Termination of Probabilistic Programs*

- Sheshansh Agrawal, Krishnendu Chatterjee, and Petr Novotny.
POPL, 2018.
41. *Data-centric Dynamic Partial Order Reduction*
Marek Chalupa, Krishnendu Chatterjee, Andreas Pavlogiannis, Nishant Sinha, and Kapil Vaidya.
POPL, 2018.
 42. *Computing Average Response Time*
Krishnendu Chatterjee, Thomas A. Henzinger, and Jan Otop
Festschrift EAL 60, 2017.
 43. *Bidirectional Nested Weighted Automata*
Krishnendu Chatterjee, Thomas A. Henzinger, and Jan Otop
CONCUR, 2017.
 44. *JTDec: A Tool for Tree Decompositions in Soot*
Krishnendu Chatterjee, Amir Kafshdar Goharshady, and Andreas Pavlogiannis
ATVA, 2017.
 45. *Faster Algorithms for Mean-Payoff Parity Games*
Krishnendu Chatterjee, Monika Henzinger, and Alexander Svozil
MFCS, 2017.
 46. *Faster Monte-Carlo Algorithms for Fixation Probability of the Moran Process on Undirected Graphs*
Krishnendu Chatterjee, Rasmus Ibsen-Jensen, and Martin A. Nowak
MFCS, 2017.
 47. *Strategy Complexity of Concurrent Safety Games*
Krishnendu Chatterjee, Kristoffer Arnsfelt Hansen, and Rasmus Ibsen-Jensen
MFCS, 2017.
 48. *Improved Set-based Symbolic Algorithms for Parity Games*
Krishnendu Chatterjee, Wolfgang Dvorak, Monika Henzinger, and Veronika Loitzenbauer
CSL, 2017.
 49. *Value Iteration for Long-run Average Reward in Markov Decision Processes*
Pranav Ashok, Krishnendu Chatterjee, Przemyslaw Daca, Jan Kretinsky, and Tobias Meggendorfer
CAV, 2017.
 50. *Automated Recurrence Analysis for Almost-Linear Expected-Runtime Bounds*
Krishnendu Chatterjee, Hongfei Fu, and Aniket Murhekar
CAV, 2017.
 51. *Non-polynomial Worst-case Analysis of Recursive Programs*
Krishnendu Chatterjee, Hongfei Fu, and Amir Kafshdar Goharshady
CAV, 2017.
 52. *The Cost of Exactness in Quantitative Reachability*
Krishnendu Chatterjee, Laurent Doyen, and Thomas A. Henzinger
KimFest, 2017.
 53. *Faster Algorithms for Weighted Recursive State Machines*
Krishnendu Chatterjee, Bernhard Kragl, Samarth Mishra, and Andreas Pavlogiannis
ESOP, 2017.
 54. *Optimizing Expectation with Guarantees in POMDPs*
Krishnendu Chatterjee, Petr Novotny, Guillermo A. Perez, Jean-Francois Raskin, and Djordje Zikelic
AAAI, 2017.

55. *Stochastic Invariants for Probabilistic Termination*
Krishnendu Chatterjee, Petr Novotny, and Djordje Zikelic
POPL, 2017.
56. *Quantitative Monitor Automata*
Krishnendu Chatterjee, Thomas A. Henzinger, and Jan Otop
SAS, 2016.
57. *Optimal Reachability and a Space-Time Tradeoff for Distance Queries in Constant-Treewidth Graphs*
Krishnendu Chatterjee, Rasmus Ibsen-Jensen, and Andreas Pavlogiannis
ESA, 2016.
58. *The Complexity of Deciding Legality of a Single Step of Magic: the Gathering*
Krishnendu Chatterjee, and Rasmus Ibsen-Jensen
ECAI, 2016.
59. *Conditionally Optimal Algorithms for Generalized Büchi Games*
Krishnendu Chatterjee, Wolfgang Dvorak, Monika Henzinger, and Veronika Loitzenbauer
MFCS, 2016.
60. *Nested Weighted Limit-Average Automata of Bounded Width*
Krishnendu Chatterjee, Thomas A. Henzinger, and Jan Otop
MFCS, 2016.
61. *Termination Analysis of Probabilistic Programs through Positivstellensatz's*
Krishnendu Chatterjee, Hongfei Fu, and Amir Kafshdar Goharshady
CAV, 2016.
62. *Computation Tree Logic for Synchronization Properties*
Krishnendu Chatterjee, and Laurent Doyen
ICALP, 2016.
63. *Game-theoretic models identify useful principles for peer collaboration in online learning platforms*
Vineet Pandey and Krishnendu Chatterjee
CSCW Companion, 2016.
64. *Model and Objective Separation with Conditional Lower Bounds: Disjunction is Harder than Conjunction*
Krishnendu Chatterjee, Wolfgang Dvorak, Monika Henzinger, and Veronika Loitzenbauer
LICS, 2016.
65. *Perfect-information Stochastic Games with Generalized Mean-Payoff Objectives*
Krishnendu Chatterjee, and Laurent Doyen
LICS, 2016.
66. *Quantitative Automata under Probabilistic Semantics*
Krishnendu Chatterjee, Thomas A. Henzinger, and Jan Otop
LICS, 2016.
67. *Robust Draws in Balanced Knockout Tournaments*
Krishnendu Chatterjee, Rasmus Ibsen-Jensen, and Josef Tkadlec
IJCAI, 2016.
68. *Optimal Cost Indefinite-Horizon Reachability in Goal DEC-POMDPs*
Krishnendu Chatterjee, and Martin Chmelik
ICAPS, 2016.
69. *Stochastic Shortest Path with Energy Constraints in POMDPs*
Tomas Brazdil, Krishnendu Chatterjee, Martin Chmelik, Anchit Gupta, and Peter Novotny
AAMAS, 2016.

70. *A Symbolic SAT-based Algorithm for Almost-sure Reachability with Small Strategies in POMDPs*
Krishnendu Chatterjee, Martin Chmelik, and Jessica Davies
AAAI, 2016.
71. *Algorithms for Algebraic Path Properties in Concurrent Systems of Constant Treewidth Components*
Krishnendu Chatterjee, Amir Kafshdar Goharshady, Rasmus Ibsen-Jensen, and Andreas Pavlogiannis
POPL, 2016.
72. *Algorithmic Analysis of Qualitative and Quantitative Termination Problems for Affine Probabilistic Programs*
Krishnendu Chatterjee, Hongfei Fu, Petr Novotny, and Rouzbeh Hasheminezhad
POPL, 2016.
73. *Counterexample Explanation by Learning Small Strategies in Markov Decision Processes*
Tomas Brazdil, Krishnendu Chatterjee, Martin Chmelik, Andreas Fellner, and Jan Kretinsky.
CAV, 2015.
74. *Faster Algorithms for Quantitative Verification in Constant Treewidth Graphs*
Krishnendu Chatterjee, Rasmus Ibsen-Jensen, and Andreas Pavlogiannis
CAV, 2015.
75. *Edit Distance for Pushdown Automata*
Krishnendu Chatterjee, Thomas A. Henzinger, Rasmus Ibsen-Jensen, and Jan Otop
ICALP, 2015.
76. *The Complexity of Synthesis from Probabilistic Components*
Krishnendu Chatterjee, Laurent Doyen, and Moshe Y. Vardi
ICALP, 2015.
77. *Nested Weighted Automata*
Krishnendu Chatterjee, Thomas A. Henzinger, and Jan Otop
LICS, 2015.
78. *Unifying Two Views on Multiple Mean-Payoff Objectives in Markov Decision Processes*
Krishnendu Chatterjee, Zuzana Komarkova, and Jan Kretinsky
LICS, 2015.
79. *Improved Algorithms for One-Pair and k-Pair Streett Objectives*
Krishnendu Chatterjee, Monika Henzinger, and Veronika Loitzenbauer
LICS, 2015.
80. *Qualitative Analysis of POMDPs with Temporal Logic Specifications for Robotics Applications*
Krishnendu Chatterjee, Martin Chmelik, Raghav Gupta, and Ayush Kanodia
ICRA, 2015.
81. *Assume-Guarantee Synthesis for Concurrent Reactive Programs with Partial Information*
Roderick Bloem, Krishnendu Chatterjee, Swen Jacobs, and Robert Koenighofer
TACAS, 2015.
82. *MultiGain: A controller synthesis tool for MDPs with multiple mean-payoff objectives*
Tomas Brazdil, Krishnendu Chatterjee, Vojtech Forejt, and Antonin Kucera
TACAS, 2015.
83. *Temporal Logic Control for Stochastic Linear Systems using Abstraction Refinement of Probabilistic Games*

- Maria Svorenova, Jan Kretinsky, Martin Chmelik, Krishnendu Chatterjee, Ivana Cerna, and Calin Belta
HSCC, 2015.
84. *Temporal Logic Motion Planning using POMDPs with Parity Objectives*
 Maria Svorenova, Martin Chmelik, Kevin Leahy, Hasan Ferit Eniser, Krishnendu Chatterjee, Ivana Cerna, and Calin Belta
HSCC, 2015.
 85. *Optimal Cost Almost-sure Reachability in POMDPs*
 Krishnendu Chatterjee, Martin Chmelik, Raghav Gupta, and Ayush Kanodia
AAAI, 2015.
 86. *Automatic Generation of Alternative Starting Positions for Traditional Board Games*
 Umair Z. Ahmmed, Krishnendu Chatterjee, and Sumit Gulwani
AAAI, 2015 (Selected for oral presentation).
 87. *Faster Algorithms for Algebraic Path Properties in RSMs with Constant Treewidth*
 Krishnendu Chatterjee, Prateesh Goyal, Rasmus Ibsen-Jensen, and Andreas Pavlogiannis
POPL, 2015.
 88. *Quantitative Interprocedural Analysis*
 Krishnendu Chatterjee, Andreas Pavlogiannis, and Yaron Velner
POPL, 2015.
 89. *The Value 1 Problem Under Finite-memory Strategies for Concurrent Mean-payoff Games*
 Krishnendu Chatterjee and Rasmus Ibsen-Jensen
SODA, 2015.
 90. *A Framework for Automated Competitive Analysis of On-line Scheduling of Firm-Deadline Tasks*
 Krishnendu Chatterjee, Andreas Pavlogiannis, Alexander Kößler, and Ulrich Schmid
RTSS, 2014.
 91. *Multidimensional Quantitative Games and Markov Decision Processes (Invited Tutorial)*
 Krishnendu Chatterjee
ATVA, 2014.
 92. *The Complexity Landscape of Partial-observation Stochastic Games (Invited Talk)*
 Krishnendu Chatterjee
ATVA, 2014.
 93. *Verification of Markov Decision Processes using Learning Algorithms*
 Tomas Brazdil, Krishnendu Chatterjee, Martin Chmelik, Vojtech Forejt, Jan Kretinsky, Marta Kwiatkowska, David Parker and Mateusz Ujma
ATVA, 2014.
 94. *SYNT 2014*
 Krishnendu Chatterjee, Ruediger Ehlers and Susmit Jha (Editors)
 95. *Game Theoretic Secure Localization in Wireless Sensor Networks*
 Susmit Jha, Stavros Tripakis, Sanjit Seshia and Krishnendu Chatterjee
IoT (Internet of Things), 2014.
 96. *Qualitative Concurrent Parity Games: Bounded Rationality*
 Krishnendu Chatterjee
CONCUR, 2014.
 97. *Partial-observation Stochastic Reachability and Parity Games*
 Krishnendu Chatterjee
MFCS, 2014 (Invited paper).

98. *CEGAR for Qualitative Analysis of Probabilistic Systems*
Krishnendu Chatterjee, Martin Chmelik and Przemyslaw Daca
CAV, 2014.
99. *Games with a Weak Adversary*
Krishnendu Chatterjee and Laurent Doyen
ICALP, 2014.
100. *The Complexity of Ergodic Mean-payoff Games*
Krishnendu Chatterjee and Rasmus Ibsen-Jensen
ICALP, 2014.
101. *Perfect-Information Stochastic Mean-Payoff Parity Games*
Krishnendu Chatterjee, Laurent Doyen, Hugo Gimbert and Youssouf Oualhadj
FoSSaCS, 2014.
102. *The Complexity of Partial-observation Stochastic Parity Games With Finite-memory Strategies*
Krishnendu Chatterjee, Laurent Doyen, Sumit Nain and Moshe Y. Vardi
FoSSaCS, 2014.
103. *Edit Distance for Timed Automata*
Krishnendu Chatterjee, Rasmus Ibsen-Jensen, and Rupak Majumdar
HSCC, 2014.
104. *Doomsday Equilibria for Omega-Regular Games*
Krishnendu Chatterjee, Laurent Doyen, Emmanuel Filiot and Jean-Francois Raskin
VMCAI, 2014.
105. *Multi-objective discounted reward verification in graphs and MDPs*
Krishnendu Chatterjee, Vojtech Forejt, and Dominik Wojtczak
LPAR-19, 2013
106. *Distributed Synthesis for LTL Fragments*
Krishnendu Chatterjee, Thomas A. Henzinger, Jan Otop and Andreas Pavlogiannis
FMCAD 13
107. *Approximating the minimum cycle mean*
Krishnendu Chatterjee, Monika Henzinger, Sebastian Krinninger and Veronika Loitzenbauer
GANDALF 13
108. *What is Decidable about Partially Observable Markov Decision Processes with omega-Regular Objectives*
Krishnendu Chatterjee, Martin Chmelik and Mathieu Tracol
CSL 13
109. *Infinite-state games with finitary conditions*
Krishnendu Chatterjee and Nathanael Fijalkow
CSL 13
110. *Looking at Mean-Payoff and Total-Payoff through Windows*
Krishnendu Chatterjee, Laurent Doyen, Mickael Randour and Jean-Francois Raskin
ATVA 13
111. *Hyperplane Separation Technique for Multidimensional Mean-Payoff Games*
Krishnendu Chatterjee and Yaron Velner
CONCUR 13
112. *MFCS 2013*
Krishnendu Chatterjee and Jiri Sgall (Editors)
113. *POMDPs under Probabilistic Semantics*
Krishnendu Chatterjee and Martin Chmelik
UAI 13 (Selected for oral presentation)

114. *Trading Performance for Stability in Markov Decision Processes*
Tomas Brazdil, Krishnendu Chatterjee, Vojtech Forejt, and Antonin Kucera
LICS 13
115. *Automata with Generalized Rabin Pairs for Probabilistic Model Checking and LTL Synthesis*
Krishnendu Chatterjee, Andreas Gaiser and Jan Kretinsky
CAV 13
116. *Faster Algorithms for Markov Decision Processes with Low Treewidth*
Krishnendu Chatterjee and Jakub Lacki
CAV 13
117. *TTP: Tool for Tumor Progression*
Johannes G. Reiter, Ivana Bozic, Krishnendu Chatterjee and Martin A. Nowak
CAV 13
118. *Quantitative Timed Simulation Functions and Refinement Metrics for Real-Time Systems*
Krishnendu Chatterjee and Vinayak Prabhu
HSCC 13
119. *Automated Analysis of Real-Time Scheduling using Graph Games*
Krishnendu Chatterjee, Alexander Kößler, and Ulrich Schmid
HSCC 13
120. *Games and Decisions for Rigorous Systems Engineering (Dagstuhl Seminar 12461)*
Nikolaj Bjorner, Krishnendu Chatterjee, Laura Kovacs, and Rupak Majumdar
Dagstuhl Reports (Editor)
121. *How to travel between languages*
Krishnendu Chatterjee, Siddhesh Chaubal, and Sasha Rubin
LATA 13
122. *Average Case Analysis of the Classical Algorithm for Markov Decision Processes with Büchi Objectives*
Krishnendu Chatterjee, Manas Joglekar and Nisarg Shah
FSTTCS 12
123. *Strategy complexity of finite-horizon Markov decision processes and simple stochastic games*
Krishnendu Chatterjee, Rasmus Ibsen-Jensen
MEMICS 12
124. *Finite Automata with Time-Delay Blocks*
Krishnendu Chatterjee, Thomas A. Henzinger and Vinayak Prabhu
EMSOFT 12
125. *Equivalence of Games with Probabilistic Uncertainty and Partial-observation Games*
Krishnendu Chatterjee, Martin Chmelik, and Rupak Majumdar
ATVA 12
126. *Polynomial-time Algorithms for Energy Games with Special Weight Structures*
Krishnendu Chatterjee, Monika Henzinger, Sebastian Krinninger and Danupon Nanongkai
ESA 12
127. *Faster Algorithms for Alternating Refinement Relations*
Krishnendu Chatterjee, Siddhesh Chaubal and Pritish Kamath
CSL 12
128. *Strategy Synthesis for Multi-dimensional Quantitative Objectives*
Krishnendu Chatterjee, Mickael Randour and Jean-Francois Raskin
CONCUR 12

129. *Partial-Observation Stochastic Games: How to Win when Belief Fails*
Krishnendu Chatterjee and Laurent Doyen
LICS 12
130. *Mean-Payoff Pushdown Games*
Krishnendu Chatterjee and Yaron Velner
LICS 12
131. *Decidable Problems for Probabilistic Automata on Infinite Words*
Krishnendu Chatterjee and Mathieu Tracol
LICS 12
132. *Efficient Controller Synthesis for Consumption Games with Multiple Resource Types*
Tomas Brazdil, Krishnendu Chatterjee, Antonin Kucera and Petr Novotny
CAV 12
133. *Robustness of Structurally Equivalent Concurrent Parity Games*
Krishnendu Chatterjee
FOSSACS 12
134. *An $O(n^2)$ Time Algorithm for Alternating Büchi Games*
Krishnendu Chatterjee and Monika Henzinger
SODA 12
135. *Synthesizing Protocols for Digital Contract Signing*
Krishnendu Chatterjee and Vishwanath Raman
VMCAI 2012
136. *Games and Markov decision Processes with Mean-payoff Parity and Energy Parity Objectives*
Krishnendu Chatterjee and Laurent Doyen
MEMICS, 2011
137. *Minimum Attention Controller Synthesis for Omega-Regular Objectives*
Krishnendu Chatterjee and Rupak Majumdar
FORMATS, 2011
138. *On Memoryless Quantitative Objectives*
Krishnendu Chatterjee, Laurent Doyen and Rohit Singh
FCT, 2011
139. *Energy and Mean-Payoff Parity Markov Decision Processes*
Krishnendu Chatterjee and Laurent Doyen
MFCS, 2011
140. *Graph Games with Reachability Objectives*
Krishnendu Chatterjee
Reachability Problems, 2011 (Invited Paper)
141. *Specification-Centered Robustness*
Roderick Bloem, Krishnendu Chatterjee, Karin Greimel, Thomas A. Henzinger, and Barbara Jobstmann
International Symposium on Industrial Embedded Systems, 2011 (Invited Paper)
142. *A reduction from parity games to simple stochastic games*
Krishnendu Chatterjee and Nathanael Fijalkow
GANDALF 2011
143. *The Complexity of Quantitative Information Flow*
Pavol Cerny, Krishnendu Chatterjee and Thomas A. Henzinger
CSF 2011
144. *Quantitative Synthesis of Concurrent Programs*
Pavol Cerny, Krishnendu Chatterjee, Thomas A. Henzinger, Arjun Radhakrishna and Rohit Singh
CAV 2011

145. *Symbolic Algorithms for Qualitative Analysis of Markov Decision Processes with Buchi Objectives*
Krishnendu Chatterjee, Monika Henzinger, Manas Joglekar and Nisarg Shah
CAV 2011
146. *Two Views on Multiple Mean Payoff Objectives in Markov Decision Processes*
Tomas Brazdil, Vaclav Brozek, Krishnendu Chatterjee, Vojtech Forejt, and Antonin Kucera
LICS 2011
147. *Temporal Specifications with Accumulative Values*
Udi Boker, Krishnendu Chatterjee, Thomas A. Henzinger and Orna Kupferman
LICS 2011
148. *Finitary Languages*
Krishnendu Chatterjee and Nathanael Fijalkow
LATA 2011
149. *The Complexity of Request-response Games*
Krishnendu Chatterjee, Thomas A. Henzinger and Florian Horn
LATA 2011
150. *Synthesis of Memory Efficient Real-Time Controllers for Safety Objectives*
Krishnendu Chatterjee and Vinayak Prabhu
HSCC 2011
151. *QUASY: Quantitative Synthesis Tool*
Krishnendu Chatterjee, Thomas A. Henzinger, Barbara Jobstmann and Rohit Singh
TACAS 2011
152. *Faster and Dynamic Algorithms For Maximal End-Component Decomposition And Related Graph Problems In Probabilistic Verification*
Krishnendu Chatterjee and Monika Henzinger
SODA 2011
153. *Generalized Mean-payoff and Energy Games*
Krishnendu Chatterjee, Laurent Doyen, Thomas A. Henzinger and Jean-Francois Raskin
FSTTCS 2010
154. *FORMATS 2010*
Krishnendu Chatterjee and Thomas A. Henzinger (Editors)
155. *The Complexity of Partial-Observation Parity Games*
Krishnendu Chatterjee and Laurent Doyen
LPAR-17 2010
156. *Probabilistic Automata on Infinite Words: Decidability and Undecidability Results*
Krishnendu Chatterjee and Thomas A. Henzinger
ATVA 2010
157. *Randomness for Free*
Krishnendu Chatterjee, Laurent Doyen, Hugo Gimbert and Thomas A. Henzinger
MFCS 2010
158. *Qualitative Analysis of Partially-Observable Markov Decision Processes*
Krishnendu Chatterjee, Laurent Doyen and Thomas A. Henzinger
MFCS 2010
159. *Obligingness Games*
Krishnendu Chatterjee, Florian Horn and Christof Loeding
CONCUR 2010

160. *Mean-payoff Automaton Expressions*
Krishnendu Chatterjee, Laurent Doyen, Herbert Edelsbrunner, Thomas A. Henzinger
and Phillipe Rannou
CONCUR 2010
161. *Discounting in Games across Time Scales*
Krishnendu Chatterjee and Rupak Majumdar
GandALF 2010
162. *Energy Parity Games*
Krishnendu Chatterjee and Laurent Doyen
ICALP 2010
163. *Measuring and Synthesizing Systems in Probabilistic Environments*
Krishnendu Chatterjee, Thomas A. Henzinger, Barbara Jobstmann and Rohit Singh
CAV 2010
164. *Gist: A Solver for Probabilistic Games*
Krishnendu Chatterjee, Thomas A. Henzinger, Barbara Jobstmann and Arjun Radhakrishna
CAV 2010
165. *Robustness in the Presence of Liveness*
Roderick Bloem, Krishnendu Chatterjee, Karin Greimel, Thomas A. Henzinger and
Barbara Jobstmann
CAV 2010
166. *Analyzing the Impact of Change in Multi-threaded Programs*
Krishnendu Chatterjee, Luca de Alfaro, Vishwanath Raman and Cesar Sanchez
FASE 2010
167. *Probabilistic Weighted Automata*
Krishnendu Chatterjee, Laurent Doyen and Thomas A. Henzinger
Proceedings of 19th International Conference on Concurrency Theory (Concur 2009)
168. *Better Quality in Synthesis through Quantitative Objectives*
Roderick Bloem, Krishnendu Chatterjee, Thomas A. Henzinger and Barbara Jobstmann
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169. *A Survey of Stochastic Games with Limsup and Liminf Objectives*
Krishnendu Chatterjee, Laurent Doyen and Thomas A. Henzinger
Proceedings of ICALP 2009
170. *Alternating Weighted Automata*
Krishnendu Chatterjee, Laurent Doyen and Thomas A. Henzinger
Proceedings of Fundamentals of Computation Theory (FCT 2009)
171. *Stochastic Games with Finitary Objectives*
Krishnendu Chatterjee, Thomas A. Henzinger and Florian Horn
Proceedings of MFCS 2009
172. *Expressiveness and Closure Properties for Quantitative Languages*
Krishnendu Chatterjee, Laurent Doyen and Thomas A. Henzinger
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173. *Alpaga: A Tool for Solving Parity Games with Imperfect Information*
Dietmar Berwanger, Krishnendu Chatterjee, Martin de Wulf, Laurent Doyen and
Thomas A. Henzinger
Proceedings of 15th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2009)

174. *Termination Criteria for Solving Concurrent Safety and Reachability Games*
Krishnendu Chatterjee, Luca de Alfaro and Thomas A. Henzinger
Proceedings of 20th ACM-SIAM Annual Symposium on Discrete Algorithm (SODA 2009)
175. *Algorithms for Game Metrics*
Krishnendu Chatterjee, Luca de Alfaro, Rupak Majumdar and Vishwanath Raman
Proceedings of the 28th Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2008)
176. *The Complexity of Coverage*
Krishnendu Chatterjee, Luca de Alfaro and Rupak Majumdar
APLAS 2008
177. *Probabilistic Systems with LimSup and LimInf Objectives*
Krishnendu Chatterjee and Thomas A. Henzinger
ILC 2008
178. *Robust Content-Driven Reputation*
Krishnendu Chatterjee, Luca de Alfaro and Ian Pye
AISec 2008
179. *Assigning Trust to Wikipedia Content*
Bo T. Adler, Krishnendu Chatterjee, Luca de Alfaro, Marco Faella, Ian Pye and Vishwanath Raman
WikiSym: International Symposium on Wikis, 2008
180. *Timed Games: Complexity and Robustness*
Krishnendu Chatterjee, Thomas A. Henzinger and Vinayak Prabhu
FORMATS 2008
181. *Environment Assumptions for Synthesis*
Krishnendu Chatterjee, Thomas A. Henzinger and Barbara Jobstmann
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182. *Strategy Construction for Parity Games with Imperfect Information*
Dietmar Berwanger, Krishnendu Chatterjee, Laurent Doyen, Thomas A. Henzinger and Sangram Raje
Proceedings of 18th International Conference on Concurrency Theory (Concur 2008)
183. *Quantitative Languages*
Krishnendu Chatterjee, Laurent Doyen and Thomas A. Henzinger
Proceedings of the 17th Annual Conference of the European Association for Computer Science Logic (CSL 2008)
184. *Trading Infinite Memory with Uniform Randomness in Timed Games*
Krishnendu Chatterjee, Thomas A. Henzinger and Vinayak Prabhu
Hybrid Systems: Computation and Control (HSCC 2008)
185. *Controller Synthesis with Budget Constraints*
Krishnendu Chatterjee, Rupak Majumdar and Thomas A. Henzinger
Hybrid Systems: Computation and Control (HSCC 2008)
186. *Model Checking ω -Regular Properties of Interval Markov Chains*
Krishnendu Chatterjee, Koushik Sen and Thomas A. Henzinger
Foundations of Software Science and Computation Structures (FoSSaCS 2008)
187. *Reliability of Interacting Real-time tasks*
Krishnendu Chatterjee, Arkadeb Ghosal, Thomas A. Henzinger, Christoph Kirsch, Alberto Sangiovanni Vincentelli, Claudio Pinello and Daniel Irkan
Design Automation, and Test in Europe (DATE 2008)
188. *Value Iteration*
Krishnendu Chatterjee and Thomas A. Henzinger
25 Years in Model Checking

189. *Stochastic Müller Games are PSPACE-complete*
Krishnendu Chatterjee
Proceedings of the 27th Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2007)
190. *Markov Decision Processes with Multiple Long-run Average Objectives*
Krishnendu Chatterjee
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191. *Qualitative Logics and Equivalences for Markov Decision Processes*
Luca de Alfaro, Krishnendu Chatterjee, Marco Faella and Axel Legay
Proceedings of 4th International Conference on Quantitative Evaluation of Systems (QEST 2007)
192. *Strategy Logic*
Krishnendu Chatterjee, Thomas A. Henzinger and Nir Piterman
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193. *Assume Guarantee Synthesis*
Krishnendu Chatterjee and Thomas A. Henzinger
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194. *Generalized Parity Games*
Krishnendu Chatterjee, Thomas A. Henzinger and Nir Piterman
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195. *Optimal Strategy Synthesis in Stochastic Müller Games*
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196. *Algorithms for Büchi Games*
Krishnendu Chatterjee, Thomas A. Henzinger and Nir Piterman
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197. *Algorithms for Omega-Regular Games with Imperfect Information*
Krishnendu Chatterjee, Laurent Doyen, Thomas A. Henzinger and Jean-Francois Raskin
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198. *Concurrent Games with Tail Objectives*
Krishnendu Chatterjee
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199. *Nash Equilibrium for Upward-Closed Objectives*
Krishnendu Chatterjee
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200. *Quantitative Compositional Reasoning*
Krishnendu Chatterjee, Luca de Alfaro, Marco Faella, Thomas A. Henzinger, Rupak Majumdar and Marielle Stoelinga
Proceedings of 3rd International Conference on Quantitative Evaluation of Systems (QEST 2006)
201. *Strategy Improvement for Concurrent Reachability Games*
Krishnendu Chatterjee, Luca de Alfaro and Thomas A. Henzinger
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202. *Strategy Improvement for Stochastic Rabin and Streett Games*
 Krishnendu Chatterjee and Thomas A. Henzinger
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203. *Games for Controls*
 Krishnendu Chatterjee, Radha Jagadeesan and Corin Pitcher
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204. *Finitary Winning in ω -Regular Games*
 Krishnendu Chatterjee and Thomas A. Henzinger
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205. *Strategy Improvement and Randomized Subexponential Algorithms for Stochastic Parity Games*
 Krishnendu Chatterjee and Thomas A. Henzinger
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206. *Markov Decision Processes with Multiple Objectives*
 Krishnendu Chatterjee, Rupak Majumdar and Thomas A. Henzinger
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207. *The Complexity of Quantitative Concurrent Parity Games*
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208. *Semiperfect-Information Games*
 Krishnendu Chatterjee and Thomas A. Henzinger
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209. *Verifying Quantitative Properties using Bound Functions*
 Arindam Chakrabarti, Krishnendu Chatterjee, Thomas A. Henzinger, Orna Kupferman and Rupak Majumdar
Proceedings of the 13th Advanced Research Working Conference on Correct Hardware Design and Verification Methods (CHARME 2005)
210. *Two-player Nonzero-sum ω -regular Games*
 Krishnendu Chatterjee
Proceedings of 16th International Conference on Concurrency Theory (Concur 2005)
211. *Counterexample-guided Planning*
 Krishnendu Chatterjee, Thomas A. Henzinger, Ranjit Jhala and Rupak Majumdar
Proceedings of 21st International Conference on Uncertainty in Artificial Intelligence (UAI 2005)
212. *The Complexity of Stochastic Rabin and Streett Games*
 Krishnendu Chatterjee, Luca de Alfaro and Thomas A. Henzinger
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213. *Mean-payoff Parity Games*
 Krishnendu Chatterjee, Thomas A. Henzinger and Marcin Jurdziński
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214. *Trading Memory for Randomness*
 Krishnendu Chatterjee, Luca de Alfaro and Thomas A. Henzinger
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215. *On Nash Equilibria in Stochastic Games*
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216. *Complexity of Compositional Model Checking of Computation Tree Logic on Simple Structures*
Krishnendu Chatterjee, Pallab Dasgupta and P.P. Chakrabarti
International Workshop on Distributed Computing (IWDC 2004)
217. *Games with Secure Equilibria*
Krishnendu Chatterjee, Thomas A. Henzinger and Marcin Jurdziński
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218. *Quantitative Stochastic Parity Games*
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219. *Simple Stochastic Parity Games*
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220. *Stack Size Analysis of Interrupt Driven Programs*
Krishnendu Chatterjee, Di Ma, Rupak Majumdar, Tian Zhao, Thomas A. Henzinger and Jens Palsberg
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221. *Implementation of Shape Grammar for Plan Analysis*
Sanhita Mallick, Krishnendu Chatterjee, Arif. N. Merchant and Pallab Dasgupta
International Conference on Information Technology for Built Environment (IT-Built 2002)
222. *Weighted Quantified Computation Tree Logic*
Krishnendu Chatterjee, Pallab Dasgupta and P.P. Chakrabarti
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Journals

1. *Limits on amplifiers of natural selection under death-Birth updating*
Josef Tkadlec, Andreas Pavlogiannis, Krishnendu Chatterjee, and Martin A. Nowak
PLOS Computational Biology
2. *Faster Algorithms for Dynamic Algebraic Queries in Basic RSMs with Constant Treewidth*
Krishnendu Chatterjee, Amir Kafshdar Goharshady, Rasmus Ibsen-Jensen, Andreas Pavlogiannis and Prateesh Goyal
ACM TOPLAS.
3. *Quantitative Automata under Probabilistic Semantics*
Krishnendu Chatterjee, Thomas A. Henzinger, and Jan Otop
LMCS
4. *Social dilemma among unequals*
Oliver Hauser, Christian Hilbe, Krishnendu Chatterjee, and Martin A. Nowak
Nature
5. *Non-polynomial Worst-Case Analysis of Recursive Programs*
Krishnendu Chatterjee, Hongfei Fu, and Amir Kafshdar Goharshady
ACM TOPLAS

6. *Population structures determine fixation probability and fixation time trade-off*
Josef Tkadlec, Andreas Pavlogiannis, Krishnendu Chatterjee, and Martin A. Nowak
Nature Communications Biology
7. *Indirect reciprocity with private, noisy and incomplete information.*
Christian Hilbe, Laura Schmid, Josef Tkadlec, Krishnendu Chatterjee, and Martin A. Nowak
PNAS
8. *Evolution of cooperation in stochastic games*
Christian Hilbe, Stepan Simsa, Krishnendu Chatterjee, and Martin A. Nowak
Nature
9. *Construction of arbitrarily strong amplifiers of natural selection using evolutionary graph theory*
Andreas Pavlogiannis, Josef Tkadlec, Krishnendu Chatterjee, and Martin A. Nowak
Nature Communications Biology (selected article for first anniversary)
10. *Algorithms for Algebraic Path Properties in Concurrent Systems of Constant Treewidth Components*
Krishnendu Chatterjee, Amir Kafshdar Goharshady, Rasmus Ibsen-Jensen, and Andreas Pavlogiannis
ACM TOPLAS.
11. *Language Acquisition with Communication between Learners*
Rasmus Ibsen-Jensen, Josef Tkadlec, Krishnendu Chatterjee, and Martin A. Nowak
Journal of the Royal Society Interface
12. *Partners and rivals in direct reciprocity*
Christian Hilbe, Krishnendu Chatterjee, and Martin A. Nowak
Nature Human Behaviour.
13. *Crosstalk in concurrent repeated games impedes direct reciprocity and requires stronger levels of forgiveness*
Johannes Reiter, Christian Hilbe, David G. Rand, Krishnendu Chatterjee, and Martin A. Nowak
Nature Communications.
14. *Termination of Affine Probabilistic Programs*
Krishnendu Chatterjee, Hongfei Fu, Petr Novotny, and Rouzbeh Hasheminezhad
ACM TOPLAS.
15. *Nested Weighted Automata*
Krishnendu Chatterjee, Thomas A. Henzinger, and Jan Otop
ACM ToCL.
16. *Automated Competitive Analysis of Real-time Scheduling with Graphs and Games*
Krishnendu Chatterjee, Andreas Pavlogiannis, Alexander Kößler, and Ulrich Schmid
Journal of Real-time Systems (JRTS)
17. *Optional interactions and suspicious behaviour facilitates trustful cooperation in prisoners dilemma*
Tadeas Priklopil, Krishnendu Chatterjee, and Martin A. Nowak
Journal of Theoretical Biology (JTB)
18. *The Complexity of Mean-Payoff Pushdown Games*
Krishnendu Chatterjee and Yaron Velner
JACM
19. *Unifying Two Views on Multiple Mean-Payoff Objectives in Markov Decision Processes*
Krishnendu Chatterjee, Zuzana Kretinska, and Jan Kretinsky
LMCS

20. *Hyperplane Separation Technique for Multidimensional Mean-Payoff Games*
Krishnendu Chatterjee and Yaron Velner
JCSS
21. *Memory- n strategies of direct reciprocity*
Christian Hilbe, Luis Alberto Martinez-Vaquero, Krishnendu Chatterjee, and Martin A. Nowak
PNAS
22. *Improved Algorithms for One-Pair and k -Pair Streett Objectives*
Krishnendu Chatterjee, Monika Henzinger, and Veronika Loitzenbauer
LMCS (Logical Methods in Computer Science)
23. *Pushdown Reachability with Constant Treewidth*
Krishnendu Chatterjee and Georg Osang
IPL (Information Processing Letters)
24. *Speical Issue of SYNT 2014*
Krishnendu Chatterjee and Ruediger Ehlers (Editors)
Acta Informatica
25. *Amplification on Undirected Population Structures: Comets Beat Stars*
Andreas Pavlogiannis, Josef Tkadlec, Krishnendu Chatterjee, and Martin A. Nowak
Nature Scientific Reports
26. *Obligation Blackwell Games and p -Automata*
Krishnendu Chatterjee and Nir Piterman
Journal of Symbolic Logic
27. *Edit Distance for Pushdown Automata*
Krishnendu Chatterjee, Thomas A. Henzinger, Rasmus Ibsen-Jensen, and Jan Otop
LMCS
28. *The Natural History of Pancreatic Cancer Metastasis Is Dominated by Driver Gene Homogeneity*
Alvin P. Makohon-Moore, Ming Zhang, Johannes G. Reiter, Ivana Bozic, Benjamin Allen, Deepanjan Kundu, Krishnendu Chatterjee, Fay Wong, Yuchen Jiao, Laura D. Wood, Ralph H. Hruban, Martin A. Nowak, Nickolas Papadopoulos, Kenneth W. Kinzler, Bert Vogelstein, and Christine A. Iacobuzio-Donahue
Nature Genetics
29. *Reconstructing metastatic seeding patterns of human cancers*
Johannes G. Reiter, Alvin P. Makohon-Moore, Jeffrey M. Gerold, Ivana Bozic, Krishnendu Chatterjee, Christine A. Iacobuzio-Donahue, Bert Vogelstein, and Martin A. Nowak
Nature Communications
30. *Trading Performance for Stability in Markov Decision Processes*
Tomas Brazdil, Krishnendu Chatterjee, Vojtech Forejt, and Antonin Kucera
JCSS
31. *Temporal Logic Control for Stochastic Linear Systems using Abstraction Refinement of Probabilistic Games*
Maria Svorenova, Jan Kretinsky, Martin Chmelik, Krishnendu Chatterjee, Ivana Cerna, and Calin Belta
Nonlinear Analysis: Hybrid Systems.
32. *What is Decidable about Partially Observable Markov Decision Processes with omega-Regular Objectives*
Krishnendu Chatterjee, Martin Chmelik and Mathieu Tracol
JCSS

33. *Optimal Cost Almost-sure Reachability in POMDPs*
Krishnendu Chatterjee, Martin Chmelik, Raghav Gupta, and Ayush Kanodia
AI Journal
34. *The computational complexity of ecological and evolutionary spatial dynamics*
Rasmus Ibsen-Jensen, Krishnendu Chatterjee and Martin A. Nowak
PNAS
35. *Doomsday Equilibria for Omega-Regular Games*
Krishnendu Chatterjee, Laurent Doyen, Emmanuel Filiot and Jean-Francois Raskin
Information and Computation
36. *Quantitative Fair Simulation Games*
Krishnendu Chatterjee, Thomas A. Henzinger, Jan Otop and Yaron Velner
Information and Computation
37. *Cellular cooperation with shift updating and repulsion*
Andreas Pavlogiannis, Krishnendu Chatterjee, Ben Adlam and Martin A. Nowak
Nature Scientific Reports
38. *Evolution of decisions in population games with sequentially searching individuals*
Tadeas Priklopil and Krishnendu Chatterjee
GAMES.
39. *CEGAR for Compositional Analysis of Qualitative Properties in Markov Decision Processes*
Krishnendu Chatterjee, Martin Chmelik and Przemyslaw Daca
FMSD (Formal Methods of System Design).
40. *Amplifiers of Selection*
Ben Adlam, Krishnendu Chatterjee and Martin A. Nowak
Proceedings of the Royal Society A (Proc R Soc A)
41. *Biological Auctions with Multiple Rewards*
Johannes Reiter, Ayush Kanodia, Raghav Gupta, Martin A. Nowak and Krishnendu Chatterjee
Proceedings of the Royal Society B (Proc R Soc B)
42. *The Complexity of Multi-Mean-Payoff and Multi-Energy Games*
Yaron Velner, Krishnendu Chatterjee, Laurent Doyen, Thomas A. Henzinger, Alexander Rabinovich and Jean-Francois Raskin
Information and Computation
43. *Quantitative Temporal Simulation and Refinement Distances for Timed Systems*
Krishnendu Chatterjee and Vinayak P. Prabhu
IEEE Trans. on Automatic Control (TACON)
44. *Clonal evolution defines the natural history of metastatic pancreatic cancer*
Makohon-Moore, A., Zhang, M., Reiter, J. G., Bozic, I., Wong, F., Jiao, Y., Chatterjee, K., Nowak, M. A., Papadopoulos, N., Vogelstein, B., Kinzler, K.W., Iacobuzio-Donahue, C. A.
Journal of Cancer Research
45. *POMDPs under Probabilistic Semantics*
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AI Journal
46. *Randomness for Free*
Krishnendu Chatterjee, Laurent Doyen, Hugo Gimbert and Thomas A. Henzinger
Information and Computation
47. *Average Case Analysis of the Classical Algorithm for Markov Decision Processes with Büchi Objectives*
Krishnendu Chatterjee, Manas Joglekar and Nisarg Shah
Theoretical Computer Science (TCS)

48. *Measuring and Synthesizing Systems in Probabilistic Environments*
Krishnendu Chatterjee, Thomas A. Henzinger, Barbara Jobstmann and Rohit Singh
JACM
49. *Probabilistic Opacity for Markov Decision Processes*
Beatrice Berard, Krishnendu Chatterjee and Nathalie Sznajder
Information Processing Letters (IPL)
50. *The Time Scale of Evolutionary Innovation*
Krishnendu Chatterjee, Andreas Pavlogiannis, Ben Adlam and Martin A. Nowak
PLOS Computational Biology
51. *Speical Issue of MFCS 2013*
Krishnendu Chatterjee and Jiri Sgall (Editors)
Information and Computation
52. *Approximating the minimum cycle mean*
Krishnendu Chatterjee, Monika Henzinger, Sebastian Krinninger, Veronika Loitzenbauer and Michael Raskin
Theoretical Computer Science
53. *Qualitative Analysis of Concurrent Mean-payoff Games*
Krishnendu Chatterjee and Rasmus Ibsen-Jensen
Information and Computation
54. *Looking at Mean-Payoff and Total-Payoff through Windows*
Krishnendu Chatterjee, Laurent Doyen, Mickael Randour and Jean-Francois Raskin
Information and Computation
55. *Temporal Specifications with Accumulative Values*
Udi Boker, Krishnendu Chatterjee, Thomas A. Henzinger and Orna Kupferman
ACM ToCL
56. *Efficient and Dynamic Algorithms for Alternating Büchi Games and Maximal End-component Decomposition*
Krishnendu Chatterjee and Monika Henzinger
JACM
57. *Partial-Observation Stochastic Games: How to Win when Belief Fails*
Krishnendu Chatterjee and Laurent Doyen
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58. *Polynomial-time Algorithms for Energy Games with Special Weight Structures*
Krishnendu Chatterjee, Monika Henzinger, Sebastian Krinninger and Danupon Nanongkai
Algorithmica
59. *Forgiver triumphs in alternating Prisoner's Dilemma*
Benjamin M. Zagorsky, Johannes G. Reiter, Krishnendu Chatterjee, and Martin A. Nowak
PLoS ONE
60. *Synthesizing Robust Systems*
Roderick Bloem, Krishnendu Chatterjee, Karin Greimel, Thomas A. Henzinger, Georg Hofferek, Barbara Jobstmann, Bettina Könighofer, and Robert Könighofer
Acta Informatica
61. *Strategy Synthesis for Multi-dimensional Quantitative Objectives*
Krishnendu Chatterjee, Mickael Randour and Jean-Francois Raskin
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62. *Evolutionary dynamics of cancer in response to targeted combination therapy*
Ivana Bozic, Johannes G. Reiter, Benjamin Allen, Tibor Antal, Krishnendu Chatterjee, Preya Shah, Yo Sup Moon, Amin Yaqubie, Nicole Kelly, Dung T. Le, Evan J.

- Lipson, Paul B. Chapman, Luis A. Diaz Jr, Bert Vogelstein, and Martin A. Nowak
eLife
Nature News and Views: NL Komarova, CR Boland. Cancer: Calculated treatment.
Nature 499, 291-292 (2013).
63. *Density Games*
 Sebastian Novak, Krishnendu Chatterjee, and Martin A. Nowak
Journal of Theoretical Biology (JTB)
 64. *Assume-guarantee Synthesis for Digital Contract Signing*
 Krishnendu Chatterjee and Vishwanath Raman
Formal Aspects of Computing (FAOC)
 65. *Synthesis of Memory-Efficient, Clock-Memory Free, and Non-Zeno Safety Controllers for Timed Systems*
 Krishnendu Chatterjee and Vinayak Prabhu
Information and Computation
 66. *Markov Decision Processes with Multiple Long-run Average Objectives*
 Tomas Brazdil, Vaclav Brozek, Krishnendu Chatterjee, Vojtech Forejt, and Antonin Kucera
Logical Methods in Computer Science (LMCS)
 67. *Symbolic Algorithms for Qualitative Analysis of Markov Decision Processes with Buchi Objectives*
 Krishnendu Chatterjee, Monika Henzinger, Manas Joglekar and Nisarg Shah
Formal Methods in System Design (FMSD)
 68. *Strategy Improvement for Concurrent Reachability and Turn-based Safety Games*
 Krishnendu Chatterjee, Luca de Alfaro and Thomas A. Henzinger
Journal of Computer Systems and Sciences (JCSS)
 69. *The Effect of One Additional Driver Mutation on Tumor Progression*
 Johannes Reiter, Ivana Bozic, Ben Allen, Krishnendu Chatterjee and Martin A. Nowak
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 70. *Code Aware Resource Management*
 Krishnendu Chatterjee, Luca de Alfaro, Marco Faella, Rupak Majumdar and Vishwanath Raman
Formal Methods in System Design (FMSD)
 71. *Energy Parity Games*
 Krishnendu Chatterjee and Laurent Doyen
Theoretical Computer Science (TCS)
 72. *The Complexity of Coverage*
 Krishnendu Chatterjee, Luca de Alfaro and Rupak Majumdar
International Journal of Foundations of Computer Science (IJFCS)
 73. *A Survey of Partial-Observation Stochastic Parity Games*
 Krishnendu Chatterjee, Laurent Doyen and Thomas A. Henzinger
Formal Methods in System Design (FMSD)
 74. *Evolutionary game dynamics in populations with different learners*
 Krishnendu Chatterjee, Damien Zufferey and Martin A. Nowak
Journal of Theoretical Biology (JTB)
 75. *The Complexity of Stochastic Muller Games*
 Krishnendu Chatterjee
Information and Computation
 76. *Discounting and Averaging in Games Across Time Scales*
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International Journal of Foundations of Computer Science (IJFCS)

77. *Evolutionary Dynamics of Biological Auctions*
Krishnendu Chatterjee, Johannes Reiter and Martin A. Nowak
Journal of Theoretical Population Biology (JTPB)
78. *Synthesis of AMBA AHB from Formal Specifications: A Case Study*
Yashdeep Godhal, Krishnendu Chatterjee and Thomas A. Henzinger
Journal on Software Tools for Technology Transfer (STTT)
79. *Timed Games: Complexity and Robustness*
Krishnendu Chatterjee, Thomas A. Henzinger and Vinayak Prabhu
Logical Methods in Computer Science (LMCS)
80. *Qualitative Concurrent Parity Games*
Krishnendu Chatterjee, Luca de Alfaro and Thomas A. Henzinger
ACM ToCL
81. *Expressiveness and Closure Properties for Quantitative Languages*
Krishnendu Chatterjee, Laurent Doyen and Thomas A. Henzinger
Logical Methods in Computer Science (LMCS)
82. *Algorithms for Game Metrics*
Krishnendu Chatterjee, Luca de Alfaro, Rupak Majumdar and Vishwanath Raman
Logical Methods in Computer Science (LMCS)
83. *Quantitative Languages*
Krishnendu Chatterjee, Laurent Doyen and Thomas A. Henzinger
ACM ToCL
84. *Strategy Construction for Parity Games with Imperfect Information*
Dietmar Berwanger, Krishnendu Chatterjee, Laurent Doyen, Thomas A. Henzinger
and Sangram Rajee
Information and Computation
85. *Strategy Logic*
Krishnendu Chatterjee, Thomas A. Henzinger and Nir Piterman
Information and Computation
86. *Qualitative Logics and Equivalences for Markov Decision Processes*
Krishnendu Chatterjee, Luca de Alfaro, Marco Faella and Axel Legay
Logical Methods in Computer Science (LMCS)
87. *Finitary Winning in ω -Regular Games*
Krishnendu Chatterjee, Thomas A. Henzinger and Florian Horn
ACM Transactions on Computational Logic (TOCL)
88. *Reduction of Stochastic Parity to Stochastic Mean-payoff Games*
Krishnendu Chatterjee and Thomas A. Henzinger
Information Processing Letters (IPL)
89. *Concurrent Games with Tail Objectives*
Krishnendu Chatterjee
Theoretical Computer Science (TCS)
90. *Stochastic Limit-average Games are in EXPTIME*
Krishnendu Chatterjee, Rupak Majumdar and Thomas A. Henzinger
International Journal of Game Theory
91. *A Survey of Stochastic ω -regular Games*
Krishnendu Chatterjee and Thomas A. Henzinger
Journal of Computer Science and Systems (JCSS)
92. *Algorithms for Omega-Regular Games with Imperfect Information*
Krishnendu Chatterjee, Laurent Doyen, Thomas A. Henzinger and Jean-Francois
Raskin
Logical Methods in Computer Science (LMCS) 3 (3), 2007

93. *Games with Secure Equilibria*
Krishnendu Chatterjee, Thomas A. Henzinger and Marcin Jurdziński
Theoretical Computer Science (TCS) 365 (2), 67-82, 2006
94. *The Power of First Order Quantification over States in Branching and Linear Time Temporal Logics*
Krishnendu Chatterjee, Pallab Dasgupta and P.P. Chakrabarti
Information Processing Letters (IPL) 91 (5) 201-210, 2004
95. *Stack Size Analysis of Interrupt Driven Programs*
Krishnendu Chatterjee, Di Ma, Rupak Majumdar, Tian Zhao, Thomas A. Henzinger and Jens Palsberg
Information and Computation, 194 (2), 144-174, 2004
96. *A Branching Time Temporal Framework For Quantitative Reasoning*
Krishnendu Chatterjee, Pallab Dasgupta and P.P. Chakrabarti
Journal of Automated Reasoning (JAR) 30 (2), 205-232, 2003

**Tools
Associated
With**

1. *QUASY*.
2. *CHIC* (Checking Interface Compatibility).
3. *WikiTrust*.
4. *Alpaga*.
5. *GIST*.
6. *TTP*.
7. *MultiGain*.

Patents

1. **IBM Invention Disclosure:** “ Remote Authentication of Fingerprints Over An Insecure Network” (United States Patent 6778688)
Pradeep Kumar Dubey, Pooja Aggarwal, Krishnendu Chatterjee, Charanjit Singh Jutla and Vijay Kumar.

Grants

1. ERC Start Grant.
2. Microsoft Faculty Fellowship Award Grant.
3. FWF Grant (with Monika Henzinger).
4. FWF NFN Grant ARiSE.
5. WWTF Grant (with Monika Henzinger).

**Invited Talks
and Tutorials**

1. PAuL (Workshop) 2006.
2. MFCS (Conference) 2009.
3. MOVEP Summer School 2010.
4. LPAR (Conference) 2010.
5. Paris Games Meeting (Workshop) 2010.
6. Brno Colloquium 2010.
7. ARTEMIS (Workshop) 2011.
8. QEST (Conference) Tutorial 2011.
9. FMR (Workshop) 2011.
10. Reachability Problems (Workshop) 2011.
11. Harvard EconCS Seminar 2011.

12. ULB (Brussels) Seminar 2011.
13. GASICS/DOTS (Workshop) 2011.
14. MEMICS, (Workshop) 2011.
15. Vienna Winter School 2012.
16. Paris LIP6 invited seminar, 2012.
17. GAMES Meeting 2012.
18. IIT Kharagpur IEEE Seminar, 2012.
19. ENS Cachan Seminar, 2013.
20. Winter School at IST, 2013.
21. Strategic Reasoning Workshop ETAPS, 2013.
22. MFCS 2014.
23. ATVA 2014 (Tutorial and invited talk).
24. ICALP Workshop: Games in Theory and Practice, 2018.

**Thesis
Review
Committee**

1. Thesis proposal review: Jan Kretinsky; Petr Novotny.
2. Qualifying exam committee: Damien Zufferey; Anmol Tomar; Arjun Radhakrishna; Johannes Reiter; Martin Chmelik; David Hahn; Andreas Pavlogiannis; Thosten Tarrach, Hamza Abusallah, Bernhard Kragl, Josef Tkadlec, Amir Goharshady, Viktor Toman, Laura Schmid.
3. Thesis review committee: Ocan Sankur, Julie De Pril, Arjun Radhakrishna, Guillermo Perez, Thorsten Tarrach, Hamza Abusallah.
4. Thesis defense chair: Viktoriia Sharmanska.

Technical Reports (that have not appeared in proceedings of Conferences or Journals)

1. *Linear Time Algorithm for Weak Parity Games*
Krishnendu Chatterjee
Technical Report: EECS-2006-153, EECS Department, University of California, Berkeley, 2006.
2. *Stochastic ω -Regular Games*
Krishnendu Chatterjee
Thesis for partial fulfillment of Ph.D, UC Berkeley
3. *Stack-size analysis for Interrupt Driven Programs*
Krishnendu Chatterjee
Thesis for partial fulfillment of Master of Science, UC Berkeley
4. *Weighted Quantified CTL: An efficient logic for verifying extremal timing properties of Timed Model*
Krishnendu Chatterjee
Thesis for partial fulfillment of Bachelor of Technology (Hons) degree, Indian Institute of Technology, Kharagpur

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