# Luca Cardelli

List of Publications by Citations

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**Version:** 2024-04-28


The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

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|---|---|---|---|
| 156<br>papers | 7,507<br>citations | 40<br>h-index | 83<br>g-index |
| 165<br>ext. papers | 8,268<br>ext. citations | 2<br>avg, IF | 6.27<br>L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 156 | On understanding types, data abstraction, and polymorphism. *ACM Computing Surveys*, **1985**, 17, 471-523 | 13.4 | 889 |
| 155 | Mobile ambients. *Theoretical Computer Science*, **2000**, 240, 177-213 | 1.1 | 474 |
| 154 | Mobile ambients. *Lecture Notes in Computer Science*, **1998**, 140-155 | 0.9 | 394 |
| 153 | A Theory of Objects. *Texts and Monographs in Computer Science*, **1996**, | | 358 |
| 152 | Programmable chemical controllers made from DNA. *Nature Nanotechnology*, **2013**, 8, 755-62 | 28.7 | 341 |
| 151 | BioAmbients: an abstraction for biological compartments. *Theoretical Computer Science*, **2004**, 325, 141-167 | 1.1 | 304 |
| 150 | A semantics of multiple inheritance. *Information and Computation*, **1988**, 76, 138-164 | 0.8 | 248 |
| 149 | GALILEO: a strongly-typed, interactive conceptual language. *ACM Transactions on Database Systems* , **1985**, 10, 230-260 | 1.6 | 226 |
| 148 | Subtyping recursive types. *ACM Transactions on Programming Languages and Systems*, **1993**, 15, 575-631 | 1.6 | 216 |
| 147 | Dynamic typing in a statically typed language. *ACM Transactions on Programming Languages and Systems*, **1991**, 13, 237-268 | 1.6 | 168 |
| 146 | Anytime, anywhere **2000**, | | 168 |
| 145 | A semantics of multiple inheritance. *Lecture Notes in Computer Science*, **1984**, 51-67 | 0.9 | 162 |
| 144 | Brane Calculi. *Lecture Notes in Computer Science*, **2005**, 257-278 | 0.9 | 146 |
| 143 | A programming language for composable DNA circuits. *Journal of the Royal Society Interface*, **2009**, 6 Suppl 4, S419-36 | 4.1 | 120 |
| 142 | A spatial logic for concurrency (part I). *Information and Computation*, **2003**, 186, 194-235 | 0.8 | 119 |
| 141 | Types for mobile ambients **1999**, | | 100 |
| 140 | Modern concurrency abstractions for C#. *ACM Transactions on Programming Languages and Systems* , **2004**, 26, 769-804 | 1.6 | 88 |

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| 139 | On process rate semantics. *Theoretical Computer Science*, **2008**, 391, 190-215 | 1.1 | 85 |
| 138 | Two-domain DNA strand displacement. *Mathematical Structures in Computer Science*, **2013**, 23, 247-271 | 0.5 | 78 |
| 137 | An Extension of System F with Subtyping. *Information and Computation*, **1994**, 109, 4-56 | 0.8 | 76 |
| 136 | Abstractions for DNA circuit design. *Journal of the Royal Society Interface*, **2012**, 9, 470-86 | 4.1 | 71 |
| 135 | Abstractions for Mobile Computation. *Lecture Notes in Computer Science*, **1999**, 51-94 | 0.9 | 71 |
| 134 | The cell cycle switch computes approximate majority. *Scientific Reports*, **2012**, 2, 656 | 4.9 | 70 |
| 133 | Comparing object encodings. *Lecture Notes in Computer Science*, **1997**, 415-438 | 0.9 | 70 |
| 132 | Compiling a functional language **1984**, | | 69 |
| 131 | On Binary Methods. *Theory and Practice of Object Systems*, **1995**, 1, 221-242 | | 67 |
| 130 | Efficient, Correct Simulation of Biological Processes in the Stochastic Pi-calculus. *Lecture Notes in Computer Science*, **2007**, 184-199 | 0.9 | 63 |
| 129 | Strand algebras for DNA computing. *Natural Computing*, **2011**, 10, 407-428 | 1.3 | 61 |
| 128 | Design and analysis of DNA strand displacement devices using probabilistic model checking. *Journal of the Royal Society Interface*, **2012**, 9, 1470-85 | 4.1 | 58 |
| 127 | Basic polymorphic typechecking. *Science of Computer Programming*, **1987**, 8, 147-172 | 1.1 | 58 |
| 126 | Mobility Types for Mobile Ambients. *Lecture Notes in Computer Science*, **1999**, 230-239 | 0.9 | 56 |
| 125 | Dynamic typing in polymorphic languages *Journal of Functional Programming*, **1995**, 5, 111-130 | 1.6 | 54 |
| 124 | Operations on records. *Mathematical Structures in Computer Science*, **1991**, 1, 3-48 | 0.5 | 53 |
| 123 | Comparing Object Encodings. *Information and Computation*, **1999**, 155, 108-133 | 0.8 | 51 |
| 122 | A semantic basis for Quest. *Journal of Functional Programming*, **1991**, 1, 417-458 | 1.6 | 51 |

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| 121 | Squeak. *Computer Graphics*, **1985**, 19, 199-204 | | 50 |
| 120 | Morphisms of reaction networks that couple structure to function. *BMC Systems Biology*, **2014**, 8, 84 | 3.5 | 47 |
| 119 | Abstract Machines of Systems Biology. *Lecture Notes in Computer Science*, **2005**, 145-168 | 0.9 | 44 |
| 118 | A spatial logic for concurrency. *Theoretical Computer Science*, **2004**, 322, 517-565 | 1.1 | 43 |
| 117 | Service combinators for Web computing. *IEEE Transactions on Software Engineering*, **1999**, 25, 309-316 | 3.5 | 42 |
| 116 | Ambient Groups and Mobility Types. *Lecture Notes in Computer Science*, **2000**, 333-347 | 0.9 | 39 |
| 115 | A Spatial Logic for Querying Graphs. *Lecture Notes in Computer Science*, **2002**, 597-610 | 0.9 | 37 |
| 114 | Types for the Ambient Calculus. *Information and Computation*, **2002**, 177, 160-194 | 0.8 | 36 |
| 113 | Amber. *Lecture Notes in Computer Science*, **1986**, 21-47 | 0.9 | 36 |
| 112 | TQL: a query language for semistructured data based on the ambient logic. *Mathematical Structures in Computer Science*, **2004**, 14, 285-327 | 0.5 | 35 |
| 111 | Building user interfaces by direct manipulation **1988**, | | 33 |
| 110 | A theory of primitive objects. *Lecture Notes in Computer Science*, **1994**, 296-320 | 0.9 | 32 |
| 109 | Stochastic analysis of Chemical Reaction Networks using Linear Noise Approximation. *BioSystems*, **2016**, 149, 26-33 | 1.9 | 30 |
| 108 | Response dynamics of phosphorelays suggest their potential utility in cell signalling. *Journal of the Royal Society Interface*, **2011**, 8, 480-8 | 4.1 | 30 |
| 107 | ERODE: A Tool for the Evaluation and Reduction of Ordinary Differential Equations. *Lecture Notes in Computer Science*, **2017**, 310-328 | 0.9 | 30 |
| 106 | Modula-3 language definition. *ACM SIGPLAN Notices*, **1992**, 27, 15-42 | 0.2 | 29 |
| 105 | Equational properties of mobile ambients. *Mathematical Structures in Computer Science*, **2003**, 13, 371-408 | 0.5 | 28 |
| 104 | Secrecy and group creation. *Information and Computation*, **2005**, 196, 127-155 | 0.8 | 28 |

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| 103 | Maximal aggregation of polynomial dynamical systems. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 10029-10034 | 11.5 | 27 |
| 102 | AN UNIVERSALITY RESULT FOR A (MEM)BRANE CALCULUS BASED ON MATE/DRIP OPERATIONS. *International Journal of Foundations of Computer Science*, **2006**, 17, 49-68 | 0.6 | 27 |
| 101 | Noise Reduction in Complex Biological Switches. *Scientific Reports*, **2016**, 6, 20214 | 4.9 | 27 |
| 100 | A Spatial Logic for Concurrency (Part II). *Lecture Notes in Computer Science*, **2002**, 209-225 | 0.9 | 27 |
| 99 | Computational modeling of the EGFR network elucidates control mechanisms regulating signal dynamics. *BMC Systems Biology*, **2009**, 3, 118 | 3.5 | 26 |
| 98 | Secrecy and Group Creation. *Lecture Notes in Computer Science*, **2000**, 365-379 | 0.9 | 26 |
| 97 | An extension of system F with subtyping. *Lecture Notes in Computer Science*, **1991**, 750-770 | 0.9 | 26 |
| 96 | Computing with biological switches and clocks. *Natural Computing*, **2018**, 17, 761-779 | 1.3 | 25 |
| 95 | An interpretation of objects and object types **1996**, | | 25 |
| 94 | Artificial Biochemistry. *Natural Computing Series*, **2009**, 429-462 | 2.5 | 25 |
| 93 | Strand Algebras for DNA Computing. *Lecture Notes in Computer Science*, **2009**, 12-24 | 0.9 | 25 |
| 92 | Mobile Ambients. *Electronic Notes in Theoretical Computer Science*, **1998**, 10, 198-201 | 0.7 | 24 |
| 91 | Reversible structures **2011**, | | 23 |
| 90 | A peptide filtering relation quantifies MHC class I peptide optimization. *PLoS Computational Biology* , **2011**, 7, e1002144 | 5 | 23 |
| 89 | A Theory of Primitive Objects: Untyped and First-Order Systems. *Information and Computation*, **1996**, 125, 78-102 | 0.8 | 22 |
| 88 | A Compositional Approach to the Stochastic Dynamics of Gene Networks. *Lecture Notes in Computer Science*, **2006**, 99-122 | 0.9 | 22 |
| 87 | Compositionality, stochasticity, and cooperativity in dynamic models of gene regulation. *HFSP Journal*, **2008**, 2, 17-28 | | 21 |
| 86 | A Query Language Based on the Ambient Logic. *Lecture Notes in Computer Science*, **2001**, 1-22 | 0.9 | 21 |

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| 85 | Processes in Space. *Lecture Notes in Computer Science*, **2010**, 78-87 | 0.9 | 20 |
| 84 | Symbolic computation of differential equivalences **2016**, | | 19 |
| 83 | On the Computational Power of Biochemistry. *Lecture Notes in Computer Science*, **2008**, 65-80 | 0.9 | 19 |
| 82 | Types for the Ambient Calculus. *Information and Computation*, **2002**, 177, 160-194 | 0.8 | 18 |
| 81 | A Graphical Representation for Biological Processes in the Stochastic pi-Calculus. *Lecture Notes in Computer Science*, **2006**, 123-152 | 0.9 | 18 |
| 80 | Phosphorelays provide tunable signal processing capabilities for the cell. *PLoS Computational Biology*, **2013**, 9, e1003322 | 5 | 17 |
| 79 | Termination Problems in Chemical Kinetics. *Lecture Notes in Computer Science*, **2008**, 477-491 | 0.9 | 17 |
| 78 | Efficient Syntax-Driven Lumping of Differential Equations. *Lecture Notes in Computer Science*, **2016**, 93-111 | 0.9 | 17 |
| 77 | Comparing Chemical Reaction Networks **2016**, | | 17 |
| 76 | The Formal Language and Design Principles of Autonomous DNA Walker Circuits. *ACS Synthetic Biology*, **2016**, 5, 878-84 | 5.7 | 17 |
| 75 | Types for data-oriented languages. *Lecture Notes in Computer Science*, **1988**, 1-15 | 0.9 | 17 |
| 74 | A process model of Rho GTP-binding proteins. *Theoretical Computer Science*, **2009**, 410, 3166-3185 | 1.1 | 16 |
| 73 | A semantic basis for quest **1990**, | | 16 |
| 72 | An imperative object calculus. *Lecture Notes in Computer Science*, **1995**, 469-485 | 0.9 | 16 |
| 71 | Chemical reaction network designs for asynchronous logic circuits. *Natural Computing*, **2018**, 17, 109-130 | 1.3 | 15 |
| 70 | Syntax-Guided Optimal Synthesis for Chemical Reaction Networks. *Lecture Notes in Computer Science*, **2017**, 375-395 | 0.9 | 15 |
| 69 | Deciding validity in a spatial logic for trees **2003**, | | 15 |
| 68 | On Subtyping and Matching **1995**, 145-167 | | 15 |

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| 67 | Unlimited multistability and Boolean logic in microbial signalling. *Journal of the Royal Society Interface*, **2015**, 12, 20150234 | 4.1 | 14 |
| 66 | A Stochastic Hybrid Approximation for Chemical Kinetics Based on the Linear Noise Approximation. *Lecture Notes in Computer Science*, **2016**, 147-167 | 0.9 | 14 |
| 65 | Turing universality of the Biochemical Ground Form. *Mathematical Structures in Computer Science*, **2010**, 20, 45-73 | 0.5 | 13 |
| 64 | A Process Model of Actin Polymerisation. *Electronic Notes in Theoretical Computer Science*, **2009**, 229, 127-144 | 0.7 | 13 |
| 63 | Deciding validity in a spatial logic for trees. *Journal of Functional Programming*, **2005**, 15, 543-572 | 1.6 | 13 |
| 62 | Molecular Filters for Noise Reduction. *Biophysical Journal*, **2018**, 114, 3000-3011 | 2.9 | 13 |
| 61 | On subtyping and matching. *ACM Transactions on Programming Languages and Systems*, **1996**, 18, 401-423 | 1.6 | 11 |
| 60 | Symbolic computation of differential equivalences. *ACM SIGPLAN Notices*, **2016**, 51, 137-150 | 0.2 | 11 |
| 59 | Typechecking dependent types and subtypes. *Lecture Notes in Computer Science*, **1988**, 45-57 | 0.9 | 11 |
| 58 | From Processes to ODEs by Chemistry. *International Federation for Information Processing*, **2008**, 261-281 | | 11 |
| 57 | Symbolic computation of differential equivalences. *Theoretical Computer Science*, **2019**, 777, 132-154 | 1.1 | 10 |
| 56 | Transcriptional regulation is a major controller of cell cycle transition dynamics. *PLoS ONE*, **2012**, 7, e29716 | 3.7 | 10 |
| 55 | An Imperative Object Calculus. *Theory and Practice of Object Systems*, **1995**, 1, 151-166 | | 10 |
| 54 | Stochastic Analysis of Chemical Reaction Networks Using Linear Noise Approximation. *Lecture Notes in Computer Science*, **2015**, 64-76 | 0.9 | 10 |
| 53 | Approximation of Probabilistic Reachability for Chemical Reaction Networks Using the Linear Noise Approximation. *Lecture Notes in Computer Science*, **2016**, 72-88 | 0.9 | 10 |
| 52 | A theory of primitive objects. *Lecture Notes in Computer Science*, **1994**, 1-25 | 0.9 | 10 |
| 51 | Efficiency through uncertainty **2019**, | | 9 |
| 50 | Programming discrete distributions with chemical reaction networks. *Natural Computing*, **2018**, 17, 131-145 | 1.3 | 9 |

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| 49 | Programming chemistry in DNA-addressable bioreactors. *Journal of the Royal Society Interface*, **2014**, 11, | 4.1 | 9 |
| 48 | The Measurable Space of Stochastic Processes **2010**, | | 9 |
| 47 | Describing semistructured data. *SIGMOD Record*, **2001**, 30, 80-85 | 1.1 | 9 |
| 46 | Efficient Switches in Biology and Computer Science. *PLoS Computational Biology*, **2017**, 13, e1005100 | 5 | 9 |
| 45 | PID Control of Biochemical Reaction Networks. *IEEE Transactions on Automatic Control*, **2021**, 1-1 | 5.9 | 9 |
| 44 | Reachability Computation for Switching Diffusions **2017**, | | 8 |
| 43 | A theory of primitive objects. *Science of Computer Programming*, **1995**, 25, 81-116 | 1.1 | 8 |
| 42 | Operations on records **1989**, 22-52 | | 8 |
| 41 | Continuous Markovian Logics - Axiomatization and Quantified Metatheory. *Logical Methods in Computer Science*, **2012**, 8, | | 8 |
| 40 | Programming Discrete Distributions with Chemical Reaction Networks. *Lecture Notes in Computer Science*, **2016**, 35-51 | 0.9 | 8 |
| 39 | The amber machine. *Lecture Notes in Computer Science*, **1986**, 48-70 | 0.9 | 8 |
| 38 | Single molecules can operate as primitive biological sensors, switches and oscillators. *BMC Systems Biology*, **2018**, 12, 70 | 3.5 | 7 |
| 37 | Processes in space. *Theoretical Computer Science*, **2012**, 431, 40-55 | 1.1 | 7 |
| 36 | Bitonal membrane systems. *Theoretical Computer Science*, **2008**, 404, 5-18 | 1.1 | 7 |
| 35 | Global computation. *ACM SIGPLAN Notices*, **1997**, 32, 66-68 | 0.2 | 7 |
| 34 | Modular Markovian Logic. *Lecture Notes in Computer Science*, **2011**, 380-391 | 0.9 | 7 |
| 33 | Uncertainty Quantification with Statistical Guarantees in End-to-End Autonomous Driving Control **2020**, | | 7 |
| 32 | From electric circuits to chemical networks. *Natural Computing*, **2020**, 19, 237-248 | 1.3 | 7 |

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| 31 | Operations on records **1989**, 75-81 | | 6 |
| 30 | . *IEEE Transactions on Automatic Control*, **2021**, 66, 17-32 | 5.9 | 6 |
| 29 | Exact Maximal Reduction Of Stochastic Reaction Networks By Species Lumping. *Bioinformatics*, **2021**, | 7.2 | 6 |
| 28 | Chemical Reaction Network Designs for Asynchronous Logic Circuits. *Lecture Notes in Computer Science*, **2016**, 67-81 | 0.9 | 5 |
| 27 | Robustness Guarantees for Bayesian Inference with Gaussian Processes. *Proceedings of the AAAI Conference on Artificial Intelligence*, **2019**, 33, 7759-7768 | 5 | 5 |
| 26 | Lineage grammars: describing, simulating and analyzing population dynamics. *BMC Bioinformatics*, **2014**, 15, 249 | 3.6 | 5 |
| 25 | Invited Talk: A Process Algebra Master Equation **2007**, | | 5 |
| 24 | Syntactic Markovian Bisimulation for Chemical Reaction Networks. *Lecture Notes in Computer Science*, **2017**, 466-483 | 0.9 | 5 |
| 23 | The Beacon Calculus: A formal method for the flexible and concise modelling of biological systems. *PLoS Computational Biology*, **2020**, 16, e1007651 | 5 | 4 |
| 22 | Central Limit Model Checking. *ACM Transactions on Computational Logic*, **2019**, 20, 1-35 | 0.9 | 4 |
| 21 | A Process Model of Rho GTP-binding Proteins in the Context of Phagocytosis. *Electronic Notes in Theoretical Computer Science*, **2008**, 194, 87-102 | 0.7 | 4 |
| 20 | Comparing chemical reaction networks: A categorical and algorithmic perspective. *Theoretical Computer Science*, **2019**, 765, 47-66 | 1.1 | 4 |
| 19 | Semistructured Computation. *Lecture Notes in Computer Science*, **2000**, 1-16 | 0.9 | 4 |
| 18 | Gener: a minimal programming module for chemical controllers based on DNA strand displacement. *Bioinformatics*, **2015**, 31, 2906-8 | 7.2 | 3 |
| 17 | Guaranteed Error Bounds on Approximate Model Abstractions Through Reachability Analysis. *Lecture Notes in Computer Science*, **2018**, 104-121 | 0.9 | 3 |
| 16 | PID Control of Biochemical Reaction Networks **2019**, | | 3 |
| 15 | Kaemika App: Integrating Protocols and Chemical Simulation. *Lecture Notes in Computer Science*, **2020**, 373-379 | 0.9 | 2 |
| 14 | Automated Design and Verification of Localized DNA Computation Circuits. *Lecture Notes in Computer Science*, **2015**, 168-180 | 0.9 | 2 |

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| 13 | Experimental Biological Protocols with Formal Semantics. *Lecture Notes in Computer Science*, **2018**, 165-182 | 0.9 | 2 |
| 12 | An implementation model of rendezvous communication. *Lecture Notes in Computer Science*, **1985**, 449-457 | 0.9 | 2 |
| 11 | Coupled membrane transporters reduce noise. *Physical Review E*, **2020**, 101, 012414 | 2.4 | 1 |
| 10 | Bioware Languages **2004**, 59-65 | | 1 |
| 9 | Analog processes **1980**, 181-193 | | 1 |
| 8 | Biomolecular mechanisms for signal differentiation.. *IScience*, **2021**, 24, 103462 | 6.1 | 1 |
| 7 | Lumpability for Uncertain Continuous-Time Markov Chains. *Lecture Notes in Computer Science*, **2021** , 391-409 | 0.9 | 1 |
| 6 | Stochastic Pi-calculus Revisited. *Lecture Notes in Computer Science*, **2013**, 1-21 | 0.9 | 0 |
| 5 | Evolution of opposing regulatory interactions underlies the emergence of eukaryotic cell cycle checkpoints. *Scientific Reports*, **2021**, 11, 11122 | 4.9 | 0 |
| 4 | The Measurable Space of Stochastic Processes. *Fundamenta Informaticae*, **2014**, 131, 351-371 | 1 | |
| 3 | Can a systems biologist fix a Tamagotchi?517-528 | | |
| 2 | Manipulating Trees with Hidden Labels. *Electronic Notes in Theoretical Computer Science*, **2007**, 172, 177-201 | 0.7 | |
| 1 | A Language for Modeling and Optimizing Experimental Biological Protocols. *Computation*, **2021**, 9, 107 | 2.2 | |