

Paulo Tabuada

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/4031875/publications.pdf>

Version: 2024-02-01

181
papers

15,176
citations

109321

35
h-index

85541

71
g-index

183
all docs

183
docs citations

183
times ranked

5250
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 1 | Event-Triggered Real-Time Scheduling of Stabilizing Control Tasks. IEEE Transactions on Automatic Control, 2007, 52, 1680-1685. | 5.7 | 3,464 |
| 2 | Control Barrier Function Based Quadratic Programs for Safety Critical Systems. IEEE Transactions on Automatic Control, 2017, 62, 3861-3876. | 5.7 | 985 |
| 3 | Secure Estimation and Control for Cyber-Physical Systems Under Adversarial Attacks. IEEE Transactions on Automatic Control, 2014, 59, 1454-1467. | 5.7 | 958 |
| 4 | To Sample or not to Sample: Self-Triggered Control for Nonlinear Systems. IEEE Transactions on Automatic Control, 2010, 55, 2030-2042. | 5.7 | 689 |
| 5 | Control Barrier Functions: Theory and Applications. , 2019, , . | | 650 |
| 6 | A Framework for the Event-Triggered Stabilization of Nonlinear Systems. IEEE Transactions on Automatic Control, 2015, 60, 982-996. | 5.7 | 586 |
| 7 | Decentralized Event-Triggered Control Over Wireless Sensor/Actuator Networks. IEEE Transactions on Automatic Control, 2011, 56, 2456-2461. | 5.7 | 576 |
| 8 | Verification and Control of Hybrid Systems. , 2009, , . | | 505 |
| 9 | Control barrier function based quadratic programs with application to adaptive cruise control. , 2014, , . | | 477 |
| 10 | An ISS self-triggered implementation of linear controllers. Automatica, 2010, 46, 1310-1314. | 5.0 | 353 |
| 11 | Event-Triggered State Observers for Sparse Sensor Noise/Attacks. IEEE Transactions on Automatic Control, 2016, 61, 2079-2091. | 5.7 | 294 |
| 12 | Robustness of Control Barrier Functions for Safety Critical Control**This work is partially supported by the National Science Foundation Grants 1239055, 1239037 and 1239085.. IFAC-PapersOnLine, 2015, 48, 54-61. | 0.9 | 256 |
| 13 | Linear Time Logic Control of Discrete-Time Linear Systems. IEEE Transactions on Automatic Control, 2006, 51, 1862-1877. | 5.7 | 249 |
| 14 | Approximately bisimilar symbolic models for nonlinear control systems. Automatica, 2008, 44, 2508-2516. | 5.0 | 234 |
| 15 | Secure State Estimation for Cyber-Physical Systems Under Sensor Attacks: A Satisfiability Modulo Theory Approach. IEEE Transactions on Automatic Control, 2017, 62, 4917-4932. | 5.7 | 219 |
| 16 | Symbolic Models for Nonlinear Control Systems Without Stability Assumptions. IEEE Transactions on Automatic Control, 2012, 57, 1804-1809. | 5.7 | 201 |
| 17 | On event-triggered and self-triggered control over sensor/actuator networks. , 2008, , . | | 196 |
| 18 | Robustness of attack-resilient state estimators. , 2014, , . | | 162 |

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 19 | Non-invasive Spoofing Attacks for Anti-lock Braking Systems. Lecture Notes in Computer Science, 2013, , 55-72. | 1.3 | 152 |
| 20 | Self-triggered linear quadratic control. Automatica, 2014, 50, 1279-1287. | 5.0 | 138 |
| 21 | System Architectures, Protocols and Algorithms for Aperiodic Wireless Control Systems. IEEE Transactions on Industrial Informatics, 2014, 10, 175-184. | 11.3 | 122 |
| 22 | Symbolic Models for Nonlinear Control Systems: Alternating Approximate Bisimulations. SIAM Journal on Control and Optimization, 2009, 48, 719-733. | 2.1 | 120 |
| 23 | Correct-by-Construction Adaptive Cruise Control: Two Approaches. IEEE Transactions on Control Systems Technology, 2016, 24, 1294-1307. | 5.2 | 114 |
| 24 | Correctness Guarantees for the Composition of Lane Keeping and Adaptive Cruise Control. IEEE Transactions on Automation Science and Engineering, 2018, 15, 1216-1229. | 5.2 | 103 |
| 25 | Secure State Estimation Against Sensor Attacks in the Presence of Noise. IEEE Transactions on Control of Network Systems, 2017, 4, 49-59. | 3.7 | 100 |
| 26 | An Approximate Simulation Approach to Symbolic Control. IEEE Transactions on Automatic Control, 2008, 53, 1406-1418. | 5.7 | 96 |
| 27 | PESSOA: A Tool for Embedded Controller Synthesis. Lecture Notes in Computer Science, 2010, , 566-569. | 1.3 | 96 |
| 28 | Secure state-estimation for dynamical systems under active adversaries. , 2011, , . | | 92 |
| 29 | Bisimulation relations for dynamical, control, and hybrid systems. Theoretical Computer Science, 2005, 342, 229-261. | 0.9 | 88 |
| 30 | Self-triggered stabilization of homogeneous control systems. , 2008, , . | | 81 |
| 31 | Event-triggered and self-triggered stabilization of distributed networked control systems. , 2011, , . | | 72 |
| 32 | Computing Robust Controlled Invariant Sets of Linear Systems. IEEE Transactions on Automatic Control, 2017, 62, 3665-3670. | 5.7 | 72 |
| 33 | On self-triggered control for linear systems: Guarantees and complexity. , 2009, , . | | 71 |
| 34 | A unifying Lyapunov-based framework for the event-triggered control of nonlinear systems. , 2011, , . | | 65 |
| 35 | Compositional Transient Stability Analysis of Multimachine Power Networks. IEEE Transactions on Control of Network Systems, 2014, 1, 4-14. | 3.7 | 65 |
| 36 | Preliminary results on state-triggered scheduling of stabilizing control tasks. , 2006, , . | | 62 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 37 | Backstepping Design for Incremental Stability. IEEE Transactions on Automatic Control, 2011, 56, 2184-2189. | 5.7 | 60 |
| 38 | Privacy-aware quadratic optimization using partially homomorphic encryption. , 2016, , . | | 59 |
| 39 | Symbolic models for nonlinear time-delay systems using approximate bisimulations. Systems and Control Letters, 2010, 59, 365-373. | 2.3 | 58 |
| 40 | Towards Robustness for Cyber-Physical Systems. IEEE Transactions on Automatic Control, 2014, 59, 3151-3163. | 5.7 | 57 |
| 41 | Bisimilar control affine systems. Systems and Control Letters, 2004, 52, 49-58. | 2.3 | 54 |
| 42 | Model Checking LTL over Controllable Linear Systems Is Decidable. Lecture Notes in Computer Science, 2003, , 498-513. | 1.3 | 53 |
| 43 | SMT-Based Observer Design for Cyber-Physical Systems under Sensor Attacks. ACM Transactions on Cyber-Physical Systems, 2018, 2, 1-27. | 2.5 | 50 |
| 44 | Supervisory Control of Discrete-Event Systems Under Attacks. Dynamic Games and Applications, 2019, 9, 965-983. | 1.9 | 50 |
| 45 | A Notion of Robustness for Cyber-Physical Systems. IEEE Transactions on Automatic Control, 2016, 61, 2108-2123. | 5.7 | 49 |
| 46 | Attack-resilient state estimation in the presence of noise. , 2015, , . | | 48 |
| 47 | Toward an Internet of Battlefield Things: A Resilience Perspective. Computer, 2018, 51, 24-36. | 1.1 | 48 |
| 48 | On the Benefits of Relaxing the Periodicity Assumption for Networked Control Systems over CAN. , 2009, , . | | 47 |
| 49 | Security for control systems under sensor and actuator attacks. , 2012, , . | | 41 |
| 50 | Input-to-state stability of self-triggered control systems. , 2009, , . | | 39 |
| 51 | Guest Editorial Special Issue on Control of Cyber-Physical Systems. IEEE Transactions on Automatic Control, 2014, 59, 3120-3121. | 5.7 | 36 |
| 52 | Compositional Abstractions of Hybrid Control Systems. Discrete Event Dynamic Systems: Theory and Applications, 2004, 14, 203-238. | 1.5 | 35 |
| 53 | On the Stability of Zeno Equilibria. Lecture Notes in Computer Science, 2006, , 34-48. | 1.3 | 35 |
| 54 | Adaptive cruise control: Experimental validation of advanced controllers on scale-model cars. , 2015, , . | | 35 |

| # | ARTICLE | IF | CITATIONS |
|----|--|------|-----------|
| 55 | SMC: Satisfiability Modulo Convex Programming. Proceedings of the IEEE, 2018, 106, 1655-1679. | 21.3 | 35 |
| 56 | Controller synthesis for bisimulation equivalence. Systems and Control Letters, 2008, 57, 443-452. | 2.3 | 34 |
| 57 | Pessoa 2.0. , 2011, , . | | 34 |
| 58 | Quotients of Fully Nonlinear Control Systems. SIAM Journal on Control and Optimization, 2005, 43, 1844-1866. | 2.1 | 33 |
| 59 | Self-triggered control over wireless sensor and actuator networks. , 2011, , . | | 33 |
| 60 | Specification-guided controller synthesis for linear systems and safe linear-time temporal logic. , 2013, , . | | 33 |
| 61 | Secure state estimation: Optimal guarantees against sensor attacks in the presence of noise. , 2015, , . | | 33 |
| 62 | Linear temporal logic motion planning for teams of underactuated robots using satisfiability modulo convex programming. , 2017, , . | | 33 |
| 63 | Control Barrier Function-Based Quadratic Programs Introduce Undesirable Asymptotically Stable Equilibria. , 2021, 5, 731-736. | | 33 |
| 64 | Towards Kron reduction of generalized electrical networks. Automatica, 2014, 50, 2586-2590. | 5.0 | 32 |
| 65 | Data driven stability analysis of black-box switched linear systems. Automatica, 2019, 109, 108533. | 5.0 | 32 |
| 66 | Symbolic approximate time-optimal control. Systems and Control Letters, 2011, 60, 256-263. | 2.3 | 31 |
| 67 | Cloud-Based Quadratic Optimization With Partially Homomorphic Encryption. IEEE Transactions on Automatic Control, 2021, 66, 2357-2364. | 5.7 | 31 |
| 68 | SMC. , 2017, , . | | 29 |
| 69 | Robust discrete synthesis against unspecified disturbances. , 2011, , . | | 28 |
| 70 | Preliminary results on correct-by-construction control software synthesis for adaptive cruise control. , 2014, , . | | 28 |
| 71 | On compositional symbolic controller synthesis inspired by small-gain theorems. , 2015, , . | | 28 |
| 72 | Hierarchical trajectory refinement for a class of nonlinear systems. Automatica, 2005, 41, 701-708. | 5.0 | 27 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 73 | Securing state reconstruction under sensor and actuator attacks: Theory and design. <i>Automatica</i> , 2020, 116, 108920. | 5.0 | 27 |
| 74 | Sound and complete state estimation for linear dynamical systems under sensor attacks using Satisfiability Modulo Theory solving. , 2015, , . | | 26 |
| 75 | Realizing simultaneous lane keeping and adaptive speed regulation on accessible mobile robot testbeds. , 2017, , . | | 26 |
| 76 | Position paper on the challenges posed by modern applications to cyber-physical systems theory. <i>Nonlinear Analysis: Hybrid Systems</i> , 2019, 34, 147-165. | 3.5 | 26 |
| 77 | Bisimulation Relations for Dynamical and Control Systems. <i>Electronic Notes in Theoretical Computer Science</i> , 2003, 69, 120-136. | 0.9 | 25 |
| 78 | Approximate reduction of dynamic systems. <i>Systems and Control Letters</i> , 2008, 57, 538-545. | 2.3 | 24 |
| 79 | Data-driven control for feedback linearizable single-input systems. , 2017, , . | | 24 |
| 80 | Dynamic Scheduling and Control-Quality Optimization of Self-Triggered Control Applications. , 2010, , . | | 23 |
| 81 | Input-output robustness for discrete systems. , 2012, , . | | 23 |
| 82 | Scalable lazy SMT-based motion planning. , 2016, , . | | 23 |
| 83 | Approximate Simulation Relations and Finite Abstractions of Quantized Control Systems. , 2007, , 529-542. | | 23 |
| 84 | PrOLoc. , 2017, , . | | 22 |
| 85 | Uses and abuses of the swing equation model. , 2015, , . | | 20 |
| 86 | Abstracting Partially Feedback Linearizable Systems Compositionally. , 2017, 1, 227-232. | | 20 |
| 87 | Composing Abstractions of Hybrid Systems. <i>Lecture Notes in Computer Science</i> , 2002, , 436-450. | 1.3 | 20 |
| 88 | Abstractions of Hamiltonian control systems. <i>Automatica</i> , 2003, 39, 2025-2033. | 5.0 | 18 |
| 89 | Secure state reconstruction in differentially flat systems under sensor attacks using satisfiability modulo theory solving. , 2015, , . | | 18 |
| 90 | SMT-Based Observer Design for Cyber-Physical Systems under Sensor Attacks. , 2016, , . | | 18 |

| # | ARTICLE | IF | CITATIONS |
|-----|--|-----|-----------|
| 91 | Event-triggered projected Luenberger observer for linear systems under sparse sensor attacks. , 2014, , | | 17 |
| 92 | Will Distributed Computing Revolutionize Peace? The Emergence of Battlefield IoT. , 2018, , . | | 17 |
| 93 | Symbolic models for nonlinear control systems using approximate bisimulation. , 2007, , . | | 16 |
| 94 | Computing controlled invariant sets for hybrid systems with applications to model-predictive control. IFAC-PapersOnLine, 2018, 51, 193-198. | 0.9 | 16 |
| 95 | Symbolic models for control systems. Acta Informatica, 2007, 43, 477-500. | 0.5 | 15 |
| 96 | Kron reduction of power networks with lossy and dynamic transmission lines. , 2012, , . | | 15 |
| 97 | Synthesis of safety controllers robust to unmodeled intermittent disturbances. , 2016, , . | | 15 |
| 98 | Approximately Bisimilar Symbolic Models for Incrementally Stable Switched Systems. Lecture Notes in Computer Science, 2008, , 201-214. | 1.3 | 15 |
| 99 | On the minimum attention and anytime attention problems for nonlinear systems. , 2010, , . | | 14 |
| 100 | Being Correct Is Not Enough: Efficient Verification Using Robust Linear Temporal Logic. ACM Transactions on Computational Logic, 2022, 23, 1-39. | 0.9 | 14 |
| 101 | Open Maps, Alternating Simulations and Control Synthesis. Lecture Notes in Computer Science, 2004, , 466-480. | 1.3 | 13 |
| 102 | Non-local Linearization of Nonlinear Differential Equations via Polyflows. , 2019, , . | | 13 |
| 103 | Symmetries and Isomorphisms for Privacy in Control Over the Cloud. IEEE Transactions on Automatic Control, 2021, 66, 538-549. | 5.7 | 13 |
| 104 | Secure state estimation and control using multiple (insecure) observers. , 2014, , . | | 12 |
| 105 | Abstracting and refining robustness for cyber-physical systems. , 2014, , . | | 12 |
| 106 | First steps toward formal controller synthesis for bipedal robots with experimental implementation. Nonlinear Analysis: Hybrid Systems, 2017, 25, 155-173. | 3.5 | 12 |
| 107 | Lazy Controller Synthesis using Three-valued Abstractions for Safety and Reachability Specifications. , 2018, , . | | 12 |
| 108 | Computing controlled invariant sets in two moves. , 2019, , . | | 12 |

| # | ARTICLE | IF | CITATIONS |
|-----|---|-----|-----------|
| 109 | A theory of robust omega-regular software synthesis. Transactions on Embedded Computing Systems, 2013, 13, 1-27. | 2.9 | 10 |
| 110 | An SMT-based approach to secure state estimation under sensor and actuator attacks. , 2017, , . | | 10 |
| 111 | Sum-of-Squares methods for controlled invariant sets with applications to model-predictive control. Nonlinear Analysis: Hybrid Systems, 2020, 36, 100858. | 3.5 | 10 |
| 112 | Self-Triggered Controllers and Hard Real-Time Guarantees. , 2016, , . | | 10 |
| 113 | Periodic Event-Triggered Control. , 2018, , 104-120. | | 10 |
| 114 | On Simulations and Bisimulations of General Flow Systems. , 2007, , 145-158. | | 10 |
| 115 | On the computational complexity of the secure state-reconstruction problem. Automatica, 2022, 136, 110083. | 5.0 | 10 |
| 116 | Isochronous manifolds in self-triggered control. , 2009, , . | | 9 |
| 117 | First steps toward formal controller synthesis for bipedal robots. , 2015, , . | | 9 |
| 118 | When is the Secure State-Reconstruction Problem Hard?. , 2019, , . | | 9 |
| 119 | Safety and Stability Guarantees for Control Loops With Deep Learning Perception. , 2022, 6, 1286-1291. | | 9 |
| 120 | Scaling up controller synthesis for linear systems and safety specifications. , 2012, , . | | 8 |
| 121 | Comparing asynchronous l-complete approximations and quotient based abstractions. , 2015, , . | | 8 |
| 122 | System identification in the presence of adversarial outputs. , 2016, , . | | 8 |
| 123 | Plausible deniability as a notion of privacy. , 2019, , . | | 8 |
| 124 | Underminer. Transactions on Embedded Computing Systems, 2018, 17, 1-28. | 2.9 | 8 |
| 125 | From LTL to rLTL monitoring. , 2020, , . | | 8 |
| 126 | Universal Approximation Power of Deep Residual Neural Networks Through the Lens of Control. IEEE Transactions on Automatic Control, 2023, 68, 2715-2728. | 5.7 | 8 |

| # | ARTICLE | IF | CITATIONS |
|-----|--|-----|-----------|
| 127 | Approximate Reduction of Dynamical Systems. , 2006, , . | | 7 |
| 128 | A symbolic approach to the design of robust cyber-physical systems. , 2013, , . | | 7 |
| 129 | Decomposing controller synthesis for safety specifications. , 2016, , . | | 7 |
| 130 | Event-Triggered and Self-Triggered Control. , 2021, , 724-730. | | 7 |
| 131 | An enhanced hierarchy for (robust) controlled invariance. , 2021, , . | | 7 |
| 132 | Hybrid Abstractions that Preserve Timed Languages. Lecture Notes in Computer Science, 2001, , 501-514. | 1.3 | 7 |
| 133 | Guest editorial: special issue on formal methods in control. Discrete Event Dynamic Systems: Theory and Applications, 2017, 27, 205-208. | 1.5 | 6 |
| 134 | Closed-form controlled invariant sets for pedestrian avoidance. , 2017, , . | | 6 |
| 135 | Verifying rLTL formulas: now faster than ever before!. , 2018, , . | | 6 |
| 136 | Evrostos. , 2019, , . | | 6 |
| 137 | Space-time scaling laws for self-triggered control. , 2008, , . | | 5 |
| 138 | A symbolic model approach to the digital control of nonlinear time-delay systems. , 2009, , . | | 5 |
| 139 | Approximate time-optimal control via approximate alternating simulations. , 2010, , . | | 5 |
| 140 | Underminer. , 2016, , . | | 5 |
| 141 | Mode-Target Games: Reactive Synthesis for Control Applications. IEEE Transactions on Automatic Control, 2018, 63, 196-202. | 5.7 | 5 |
| 142 | Towards the use of Symmetries to Ensure Privacy in Control Over the Cloud. , 2018, , . | | 5 |
| 143 | Protecting the Privacy of Networked Multi-Agent Systems Controlled over the Cloud. , 2018, , . | | 5 |
| 144 | Data-driven control for SISO feedback linearizable systems with unknown control gain. , 2019, , . | | 5 |

| # | ARTICLE | IF | CITATIONS |
|-----|---|-----|-----------|
| 145 | Symbolic models for unstable nonlinear control systems. , 2010, , . | | 4 |
| 146 | Distorting an Adversary's View in Cyber-Physical Systems. , 2018, , . | | 4 |
| 147 | Distortion-Based Lightweight Security for Cyber-Physical Systems. IEEE Transactions on Automatic Control, 2021, 66, 1588-1601. | 5.7 | 4 |
| 148 | Sampled-Data Stabilization With Control Lyapunov Functions via Quadratically Constrained Quadratic Programs. , 2022, 6, 680-685. | | 4 |
| 149 | A simple hierarchy for computing controlled invariant sets. , 2020, , . | | 4 |
| 150 | Symbolic models for linear control systems with disturbances. , 2007, , . | | 3 |
| 151 | Towards a compositional analysis of multi-machine power systems transient stability. , 2013, , . | | 3 |
| 152 | Event-Triggered and Self-Triggered Control. , 2013, , 1-10. | | 3 |
| 153 | Controller Synthesis for Mode-Target Games. IFAC-PapersOnLine, 2015, 48, 343-350. | 0.9 | 3 |
| 154 | PrOLoc: resilient localization with private observers using partial homomorphic encryption. , 2017, , . | | 3 |
| 155 | Secure State-Reconstruction Over Networks Subject to Attacks. , 2021, 5, 157-162. | | 3 |
| 156 | Decentralized Resilient State-Tracking. , 2021, , . | | 3 |
| 157 | Sensor/Actuator Abstractions for Symbolic Embedded Control Design. Lecture Notes in Computer Science, 2005, , 640-654. | 1.3 | 2 |
| 158 | Towards backstepping design for incremental stability. , 2010, , . | | 2 |
| 159 | Correction to "Compositional Transient Stability Analysis of Multimachine Power Networks". IEEE Transactions on Control of Network Systems, 2017, 4, 676-677. | 3.7 | 2 |
| 160 | Deciding Stability of a Switched System Without Identifying It. , 2018, , . | | 2 |
| 161 | Cyber-physical systems virtual organization: Active resources. , 2019, , . | | 2 |
| 162 | Rapid Top-Down Synthesis of Large-Scale IoT Networks. , 2020, , . | | 2 |

| # | ARTICLE | IF | CITATIONS |
|-----|--|-----|-----------|
| 163 | Watch and Learn: Learning to control feedback linearizable systems from expert demonstrations. , 2022, , . | | 2 |
| 164 | Local factorization of trajectory lifting morphisms for single-input affine control systems. Systems and Control Letters, 2006, 55, 761-769. | 2.3 | 1 |
| 165 | Symbolic models for nonlinear control systems affected by disturbances. , 2008, , . | | 1 |
| 166 | Secure system identification. , 2016, , . | | 1 |
| 167 | Improving sparsity in time and space via self-triggered sparse optimal controllers. , 2017, , . | | 1 |
| 168 | Symmetries and privacy in control over the cloud: uncertainty sets and side knowledge*. , 2019, , . | | 1 |
| 169 | The Secure State Estimation Problem. Lecture Notes in Control and Information Sciences, 2021, , 123-143. | 1.0 | 1 |
| 170 | Why not both? Exact continuous and discrete optimization with submodularity. , 2020, , . | | 1 |
| 171 | To beam or not to beam? Beamforming with submodularity-inspired group sparsity. , 2020, , . | | 1 |
| 172 | Trust your supervisor: quadrotor obstacle avoidance using controlled invariant sets. , 2021, , . | | 1 |
| 173 | Automaton-based Implicit Controlled Invariant Set Computation for Discrete-Time Linear Systems. , 2021, , . | | 1 |
| 174 | Discounting the past in robust finite-state systems. , 2014, , . | | 0 |
| 175 | Preface for the SYNT. Acta Informatica, 2020, 57, 1-1. | 0.5 | 0 |
| 176 | Controller Synthesis for CPS. , 2021, , 435-441. | | 0 |
| 177 | A coding approach to localization using landmarks. , 2020, , . | | 0 |
| 178 | Privacy Against Adversarial Classification in Cyber-Physical Systems. , 2020, , . | | 0 |
| 179 | Controller Synthesis for CPS. , 2020, , 1-7. | | 0 |
| 180 | Persistent Connected Power Constrained Surveillance with Unmanned Aerial Vehicles. , 2020, , . | | 0 |

| # | ARTICLE | IF | CITATIONS |
|-----|--|----|-----------|
| 181 | Split to win: near-optimal sensor network synthesis via path-greedy subproblems. , 2021, , . | | 0 |