Guillermo A. Pérez — CV

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Education

Université libre de Bruxelles (ULB) — **Brussels, Belgium**
Ph.D. Computer Science — *2012–2016*

National Tsing-Hua University (NTHU) — **Hsinchu, Taiwan**
M.Sc. Information Systems and Applications — *2010–2012*

Universidad Tecnológica Centroamericana (UNITEC) — **Tegucigalpa, Honduras**
B.Sc. Computer Science, ***Summa cum Laude*** — *2005–2009*

Awards and Scholarships

- Best Paper Award – Int'l Conf. on Formal Modeling & Analysis of Timed Sys. (FORMATS) 2023
- Outstanding Teaching Award within the Faculty of Science, University of Antwerp *2021*
- Fondation Wiener-Anspach Post-Doctoral subsidy *2017*
- Kurt Gödel medal for my synthesis tool AbsSynthe at FLoC Olympic Games *2014*
- Fonds de la Recherche Scientifique (F.R.S.-FNRS) Aspirant fellowship *2014–2018*
- International Cooperation and Development Fund (ICDF) scholarship *2010–2012*

Employment

University of Antwerp — **Antwerp, Belgium**
Tenured Associate Professor — *October 2023–present*

University of Antwerp — **Antwerp, Belgium**
Tenure-Track Assistant Professor — *October 2018–2023*

Université libre de Bruxelles — **Brussels, Belgium**
Research Assistant (supported by F.R.S.-FNRS) — *January 2017–October 2018*

University of Oxford — **Oxford, United Kingdom**
Visiting Researcher — *2017*

Informática Atlántida — **Tegucigalpa, Honduras**
Software Engineer — *2008–2010*

Membership in Scientific Societies

Member of ELLIS: European Laboratory for Learning and Intelligent Systems — **Europe**
Working with colleagues in Europe on formal methods for and with artificial intelligence — *2023–present*

Member of the NEXOR consortium — **Antwerp, Belgium**
Working on the next generation of cyber-physical systems at the University of Antwerp — *2021–present*

Member of Flanders Make core lab at the University of Antwerp — **Antwerp, Belgium**
The Flemish strategic research center for the manufacturing industry — *2020–present*

Languages

English: Fluent
Dutch: Fluent
Spanish: Native
French: Fluent
Mandarin Chinese: Intermediate
German: Basic

Supervision

PhD students

- Kasper Engelen *2022–present*
- Shrisha Rao *2021–present*
- Ramesh Krishnamurthy (with Prof. Denil at UAntwerp) *2021–present*
- Dr. Gaëtan Staquet (with Prof. Bruyère at UMons) *2020–2024*
- Dr. Tim Leys *2020–2024*
- Dr. Florent Delgrange (with Prof. Nowé at VUB) *2020–2023*
- Dr. Dennis Gross (with Prof. Jansen at Radboud) *2019–2024*
- Dr. Ritam Raha (with Dr. Fijalkow at LaBRI, Bordeaux) *2019–2023*
- Dr. Raphaël Berthon (with Prof. Raskin at ULB) *2018-2022*

Teaching

Bachelor's courses

- Theoretical Computer Science Seminar (Spring) *2024–present*
- Compilers (Fall) *2019–present*

Master's courses

- Mathematical Foundations of Reinforcement Learning (Fall) *2021–present*
- Specification and Verification (Fall) *2019–present*
- Programming Paradigms (Spring) *2019–present*

Service

Invited speaker

Automated Synthesis: Functional, Reactive and Beyond - Dagstuhl Seminar (24171) **Germany**
The Reactive Synthesis Competition (SYNTCOMP): 2018-2021 *2024*

Parameter Synthesis for One-Counter Automata **France**
10th International Workshop on Weighted Automata: Theory and Applications *2021*

Regret Minimization in Discounted-Sum Games **Belgium**
International Symposium on Games, Automata, Logics, and Formal Verification (GandALF) *2020*

Revisiting Synthesis for One-Counter Automata **Germany**
22nd International Workshop on Verification of Infinite-State Systems *2020*

Optimizing Expectation with Guarantees in POMDPs **Belgium**
Workshop: Theory and Algorithms in Graph and Stochastic Games *2019*

Machine Learning and Model Checking Join Forces - Dagstuhl Seminar (18121) **Germany**
Graph-Based Reductions for Model Checking and Learning MDPs *2018*

Competition organizer

Annual Reactive Synthesis Competition, with S. Jacobs, P. Schlehuber-Caissier
SYNTCOMP is affiliated with the conference CAV, `https://www.syntcomp.org/` *2019–present*

Steering committee member

- The International Conference on Quantitative Evaluation of SysTems (QEST) *2023–2027*

Program chair

- Organizer of the "The Futures of Reactive Synthesis" Dagstuhl seminar (23391), with N. Fijalkow, B. Finkbeiner, and E. Polgreen *2023*
- General and program chair of the International Conference on Concurrency Theory (CONCUR) 2023, joint with J.-F. Raskin *2023*
- Workshop chair of the Federated Logic Conference (FLoC) 2022, joint with S. Almagor *2022*
- Program chair of the Workshop on Synthesis (SYNT 2021), joint with E. Polgreen *2021*
- Organizer of SYNTCOMP Camp, a satellite tutorial of ETAPS 2019 *2019*

Program committee member

- 7th Int'l Symposium on AI Verification (SAIV 2024) *2024*
- 35th Int'l Conference on Concurrency Theory (CONCUR 2024) *2024*
- 45th Int'l Conference on Applications and Theory of Petri Nets and Concurrency (PN 2024) *2024*
- 23rd Int'l Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2024) *2024*
- 32nd EACSL Annual Conference on Computer Science Logic (CSL 2024) *2024*
- 34rd Benelux Conference on Artificial Intelligence and the 31th Belgian Dutch Conference on Machine Learning (BNAIC/BeNeLearn 2022) *2022*
- 18th Conference on Formal Modeling and Analysis of Timed Systems (FORMATS 2020) *2020*
- AAAI Conference on Artificial Intelligence (AAAI) *2021, 2022*
- Conference on Reachability Problems (RP) *2019, 2022*
- Int'l Symp. on Games, Automata, Logics, and Formal Verif. (GandALF) *2021, 2022, 2023, 2024*
- Workshop on Synthesis (SYNT) *2019, 2022, 2024*

Research Grants

PI of Synthesis of reactive systems from formal specifications and examples (SynthEx) **€194K**
Funded by the Research Foundation - Flanders (FWO) at UAntwerp *2024–2027*

co-PI of Infectious disease economics and AI with guarantees (DESCARTES) **€800K**
Funded by the Inter-university Research Fund (iBOF), Flanders, Belgium *2021–2024*

co-PI of Deterministic and inexpensive realizations of advanced control (DIRAC-SBO) **€468K**
Funded by Flanders Make, the strategic research center for the Flemish manufacturing industry *2020–2023*

PI of Safe Artificial Intelligence and Learning for Verification (SAILor) **€254K**
Funded by the Research Foundation - Flanders (FWO) at UAntwerp *2020–2023*

PI of Counter-Automata Algorithms for Software Verification Tools (CAST) **€205K**
Funded by the University Research Fund (BOF) at UAntwerp *2019–2023*

Software Tools

- AbsSynthe: A controller-synthesis tool from safety specifications
- GPOMCP: A partial-observation Monte Carlo planner with guarantees
- Acacia-bonsai: Universal coBüchi synthesis algorithms for temporal specifications

References

- Ann Nowé, Ph.D.
  Prof. at VUB, Belgium
  Email: ann.nowe@vub.be
- Frits W. Vaandrager, Ph.D.
  Prof. at Radboud University, Netherlands
  Email: f.vaandrager@cs.ru.nl
- Joost-Pieter Katoen, Ph.D.
  Prof. at RWTH Aachen University, Germany
  Email: katoen@cs.rwth-aachen.de
- Jean-François Raskin, Ph.D.
  Prof. at Université libre de Bruxelles, Belgium
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