Senthil Rajasekaran

senthilrajasekaran.github.io | +1(504)799-9980 | srajasek93@gmail.com

I am a **postdoctoral research associate** in the **formal methods and verification group** at the **Université Libre de Bruxelles**, supervised by **Jean-François Raskin**. I am currently funded by a **ULB Seal of Excellence Grant** (see the Selected Fundings and Recognitions section for further details).

RESEARCH INTERESTS

Multi-Agent Systems, Equilibria Analysis, Automata Theory, Complexity Theory, Game Theory, Numerical Analysis, Distributed Computing, Logics, Probability Theory
Generally, **Theoretical Computer Science** and **Mathematics**

EDUCATION

PhD in Computer Science **30 Aug 2019 – 31 Aug 2025**
Rice University, Houston, TX, USA
Advisor: **Moshe Y. Vardi**
PhD Committee: **Konstantinos Mamouras, Ronald Goldman,** and **Peter Varman**
Thesis: The Complexity of Verifying and Realizing Equilibria in Finite-Horizon Multi-Agent Systems

MSc in Mathematics and the Foundations of Computer Science **30 Aug 2016 – 11 Nov 2017**
University of Oxford, Oxford, UK
Advisors: **Julian Gutierrez, Michael Wooldridge,** and **Giuseppe Perelli**
Thesis: The Model Checking and Satisfiability Problems for Strategy Logic and its Fragments

BS in Mathematics **15 Aug 2011 – 29 May 2015**
Tulane University, New Orleans, LA, USA
Manga cum laude with departmental honors

BS in Economics **15 Aug 2011 – 29 May 2015**
Tulane University, New Orleans, LA, USA
Magna cum laude

Study Abroad: Budapest Semesters in Mathematics **15 Aug 2014 – 31 Dec 2014**
Budapest, Hungary
One semester, graduated with honors. Part of my BS degree in mathematics.

Study Abroad: Math in Moscow **20 Aug 2015 – 31 May 2016**
Moscow, Russia
Two semesters, graduated with honors

EMPLOYMENT

Postdoctoral Research Associate **15 Nov 2025 - Present**
Université Libre de Bruxelles, Brussels, Belgium

Software Analysis Group Intern **1 Jun 2022 – 31 Aug 2022**
Nokia Bell Labs, Murray Hill, NJ, USA

Full Stack Software Engineer **10 Mar 2018 – 20 Mar 2019**

Digicomm Inc, Metairie, LA, USA

LONG PAPERS

A Numerical Approach to the Realizability Problems for Memoryless Nash and Epsilon Equilibria in Concurrent Multiplayer Reachability Games — **in submission 2026**
Senthil Rajasekaran, Jean-François Raskin, and Moshe Y. Vardi

Target Discounted Sum Problem on Markov Chains with Applications to Markov Decision Processes — **in submission 2026**
Nathalie Bertrand, Pranav Ghorpade, **Senthil Rajasekaran**, Sasha Rubin, and Moshe Y. Vardi

Categorizer Automata for Discounted Sum Payoffs — **in submission 2026**
Nathalie Bertrand, Pranav Ghorpade, **Senthil Rajasekaran**, Sasha Rubin, and Moshe Y. Vardi

Verification of Correlated Equilibria in Concurrent Reachability Games — **in submission 2026**
Senthil Rajasekaran, Jean-François Raskin, and Moshe Y. Vardi

Modeling Concurrent Multi-Agent Systems — **submitted to LMCS 2026**
Senthil Rajasekaran and Moshe Y. Vardi

The Complexity of Verifying and Realizing Equilibria in Finite-Horizon Multi-Agent Systems — **PhD Thesis**
Senthil Rajasekaran (*available per request)*

Verifying Equilibria in Finite-Horizon Probabilistic Concurrent Game Systems — **LMCS 2026**
Senthil Rajasekaran and Moshe Y. Vardi

Multi-Agent Systems with Quantitative Satisficing Goals — **IJCAI 2023**
Senthil Rajasekaran, Suguman Bansal, and Moshe Y. Vardi

Verification and Realizability in Finite-Horizon Multi-Agent Systems — **KR 2022**
Senthil Rajasekaran and Moshe Y. Vardi

Nash Equilibria in Finite-Horizon Multiagent Concurrent Games — **AAMAS 2021**
Senthil Rajasekaran and Moshe Y. Vardi

A Closed-Form Solution Might be Given by a Tree. Valuations of Quadratic Polynomials — **Scientia A 2019**
(undergraduate paper on mathematics)
Alyssa Byrnes, Julie Fink, Gary Lavigne, Isabelle Nogues, **Senthil Rajasekaran**, Amber Yuan, Leyda Almodovar, Xiao Guan, Aashita Kesarwani, Luis Medina, Eric Rowland, and Victor Moll

SHORT PAPERS

A Quantitative Approach to Asch Conformity in Frontier Large Language Models — **submitted 2026**
Senthil Rajasekaran and Stylianos Loukas Vasileiou

Concurrent Multi-Agent Systems -- A Tale of Two Representations — **LAMAS 2026**
Senthil Rajasekaran and Moshe Y. Vardi

Verification and Realizability in Finite-Horizon Multi-Agent Systems **AAAI-SSS 2023**
Senthil Rajasekaran and Moshe Y. Vardi

Nash Equilibria in Finite-Horizon Multi-Agent Concurrent Games **LAMAS&SR 2021**
Senthil Rajasekaran and Moshe Y. Vardi

SELECTED TALKS

Concurrent Multi-Agent Systems – A Tale of Two Representations **19 Jul 2026**
LAMAS&SR

The Complexity of Verifying and Realizing Equilibria in **29 Apr 2025**
Finite-Horizon Multi-Agent Systems
PhD defense, given at **Rice University**

The Verification Problem for Probabilistic Multi-Agent Systems **2 Dec 2024**
Rice University, Graduate Seminar

Multi-Agent Systems with Finite-Horizon Goals **16 Jul 2024**
Simons Institute, Games and Equilibria in System Design and Analysis Workshop

Multi-Agent Systems with Quantitative Satisficing Goals **20 Aug 2023**
Given at **IJCAI 2023**

Realizability and Nondeterminism **20 Feb 2023**
Rice University, Graduate Seminar

Verification and Realizability in Finite-Horizon Multi-Agent Systems **28 May 2023**
Given at **AAAI SSS-23** and **FLoC 2022** **4 Aug 2022**

A Proof Assistant for Scalable Distributed Protocols **2 Sept 2022**
Bell Labs Internship Talk

Nash Equilibria in Finite-Horizon Multi-Agent Concurrent Games **5 May 2021**
Given at **AAMAS 2021, Rice University,** Graduate Seminar **15 Mar 2021**

SELECTED FUNDINGS AND RECOGNITIONS

ULB Seal of Excellence Grant **2026 - Present**
Grant awarded to five ULB-hosted MSCA-PF applications that scored highly but did not get funded due to the sharp jump in applications in 2025.
One year of funding + 5000 euros

LICS Logic Mentoring Workshop Student Scholarship **Jun 2025**

Invited Speaker at Simons Institute Workshop **Jul 2024**

Rice University Media Feature **Aug 2023**
"Quantitative goal approach to game-theory problem could be important building block"

IJCAI Student Scholarship **Aug 2023**

Academic Exchange at the University of Edinburgh **Jun 2023**

FLoC Student Scholarship **Aug 2022**

AAMAS Student Scholarship **Jul 2021**

Served as a reviewer for Communications of the ACM (CACM) and LMCS
Although I regularly serve as a reviewer for top-tier conferences, these two venues are generally more selective

TEACHING AND SUPERVISION

Supervision of **Pranav Ghorpade** **Aug 2025 – Present**
Suggested research directions, reviewed drafts, and met with Pranav weekly

Computability and Complexity **Fall 2026**
Instructor: **Jean-François Raskin**
Role: **Lecturer/Deliver Practicals**

Advanced Logic in Computer Science **Fall 2023, 2024**
Instructor**: Moshe Y. Vardi**
Role: **Lecturer**

Introduction to Mathematical Cryptography **Spring 2021**
Instructor: **Ronald Goldman**
Role: **Teaching Assistant/Grader**

Probabilistic Algorithms and Data Structures **Spring 2020**
Instructor: **Anshumali Shrivastava**
Role: **Teaching Assistant/Grader**