

Research topics

- Formal Methods **Automata Theory, Context-Free Grammars, Software Verification, SMT Theory**
- Program Analysis **Symbolic Execution, Binary Analysis, Software Verification, Interprocedural Analysis, Vulnerability Detection, Fault Injection**

Peer-reviewed publications

- SPIN 2025 **An Efficient and Versatile Approach to Shortest Path Problems in Interprocedural Programs**
Theo De Castro Pinto, Antoine Rollet, Grégoire Sutre
Accepted, publication scheduled for early May.
- SEFM 2023 **Guiding Symbolic Execution with A-star**
Theo De Castro Pinto, Antoine Rollet, Grégoire Sutre, Ireneusz Tobor
<https://hal.science/hal-04288806>

Education

- 2021-2025 **PhD Student:** *LaBRI, Université de Bordeaux, Serma Safety and Security*
Supervision: *Sébastien Ordas, Antoine Rollet, Grégoire Sutre, Ireneusz Tobor*
Subject: *Detecting physical vulnerabilities through automated binary analysis*
- 2019-2021 **Master in Computer Science** *Software Verification with honour*
Université de Bordeaux
- 2016-2019 **Bachelor in Computer Science** *with highest honour*
Université de Bordeaux (first and second years)
Cardiff Metropolitan University (third year)

Supervision

- 2024 **Guilhem Ardouin (3 month internship)**
Implementation of A-based heuristic in KLEE*
- 2024 **Mohammed Bouhaja (3 month supervision)**
Creation of a poster describing shortest-path problems

Teaching (~ 230 hours)

- 2025 **Introduction to research (12 hours)**

- 2024 **Introduction to algorithmic** (35 hours)
I was in complete charge of this integrated course (1st year at ENSEIRB-MATMECA)
- 2024 **Algorithmic project, imperative programming** (25 hours)
Practical work (1st year at ENSEIRB-MATMECA)
- 2024 **Internship** (2 hours)
Oral examination (2nd year at ENSEIRB-MATMECA)
- 2023 **Introduction to algorithmic** (17.5 hours)
I was in charge of half of this integrated course (1st year at ENSEIRB-MATMECA)
- 2023 **Object Approach** (24 hours)
Practical work (1st year of Computer Science Master at Université de Bordeaux)
- 2023 **Algorithmic project, fonctionnal programming** (25 hours)
Practical work (1st year at ENSEIRB-MATMECA)
- 2022 **Formal Methods and Applications** (3 hours)
One-off intervention (3rd year at ENSEIRB-MATMECA)
- 2022 **Logic and Proofs** (14 hours)
I was in charge of half of this course (1st year at ENSEIRB-MATMECA)
- 2021 **Python Programming** (24 hours)
Practical work (1st year of MISCIPCG Bachelor at Université de Bordeaux)
- 2020 **Computer Science Tutoring** (~50 hours)
Helping students with difficulties (1st to 3rd year of Computer Science Bachelor at Université de Bordeaux)

Talks

- 2025 **SPIN 2025, Hamilton**
"An Efficient and Versatile Approach to Shortest Path Problems in Interprocedural Programs"
- 2024 **Semi-doc AFoDIB, Talence**
"Guiding Symbolic Execution with A-star"
- 2023 **SEFM 2023, Eindhoven**
"Guiding Symbolic Execution with A-star"
- 2022 **AFADL 2022, Vannes**
"Analyse automatisée de binaires à la recherche de vulnérabilités matérielles"

Miscellaneous

Languages **French**, native
English, fluent
German, B2-C1

AFoDIB **Vice president of the AFoDIB** (Association de la Formation Doctorale d' Informatique de Bordeaux)