dr. Tom Lauwaerts

Dutch Native · English High professional proficiency · French Elementary · Chinese Novice

Education

PhD. in Computer Science · 2021 - 2025

Ghent University, TOPL lab

BSc. and MSc. in Computer Science · 2016 - 2021

Ghent University, faculty of Sciences

Work experience

PhD Researcher: Programming Languages

Ghent University · 2021 - 2025 (4 years)

Research into debugging and testing tools with a strong formal foundation.

Teaching Assistant

Ghent University · 2021 - 2025 (4 years)

Supervising the tutorials and projects, and assisting oral exams for the courses: Fundamenten van programmeertalen, and Logisch programmeren.

Coaching master students, and jury member for master dissertations.

Embedded Software Developer (Internship)

Creative Therapy (startup) · July - August 2020

Researching WebUSB technology and developing a USB gadget driver in Linux for WebUSB communication between the online platform and the hardware.

Highlighted research output

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Multiverse debugging on microcontrollers 🔤 🕸 💠

2025-10 | Conference paper (OOPSLA'25)

Event-Based Out-of-Place Debugging 🔤 🖸 🗐

2022-09-14 | Conference paper (MPLR'22)

Academic services

Ø DEBT workshop co-organizer ⋅ 2025

Co-organizing the DEBT'25 workshop with Burcu Kulahcioglu Ozkan (TU Delft).

⊘ Programming artifact evaluation committee member · 2024 - 2026

AEC member for the Programming conference and journal (volumes 9 and 10).

Volunteer work

Science communication and outreach · 2021 - present

Assisting with SID-in, Alumniday UGent, Unimath, and Computer Science Olympiad.

Open-source software contributor · 2021 - present

O WARDuino · O latch

Honors

𝕝 ISSTA'23 Research competition: 3rd place ⋅ 2023

International ACM Research competition at ECOOP/ISSTA 2023 3rd place medal.

MIO: Multiverse Debugging in the Face of Input/Output • • •

2025-10 | **Tom Lauwaerts**, Maarten Steevens, Christophe Scholliers | Proceedings of the ACM on Programming Languages (PACMPL)

I will present this work at the main track of OOPSLA 2025 conference.

Foundations for Constrained Debugging Techniques

2025-08 | Tom Lauwaerts | PhD dissertation (Universiteit Gent)

Latch: Enabling large-scale automated testing on constrained systems

2024-12 | Tom Lauwaerts, Stefan Marr, Christophe Scholliers | Science of Computer Programming Journal

I presented this work during a poster session at the ISSTA'23 conference.

Concolic Multiverse Debugging

2024-09-13 | Maarten Steevens, Tom Lauwaerts, Christophe Scholliers | Short paper (DEBT'24)

An early version of this work was presented by myself at the final of the ISSTA'23 Research competition.

WARDuino: An embedded WebAssembly virtual machine 🔳 🗞 🔳

2024-06 | Tom Lauwaerts, Robbert Gurdeep Singh, Christophe Scholliers | Journal of Computer Languages

Presented at the International Conference on the Art, Science, and Engineering of Programming 2022, during a poster session and a dedicated demonstration.

Out-of-Place Debugging on Constraint Devices with the EDWARD Debugger (Demo)

2023-07-17 | **Tom Lauwaerts**, Carlos Rojas Castillo, Elisa Gonzalez Boix, Christophe Scholliers | Short paper (DEBT'23)

Demo presentation at the first Workshop on Future Debugging Techniques (DEBT'23).

Demo: Debugging Constraint Devices with EDWARD

2023-06-18 | **Tom Lauwaerts**, Carlos Rojas Castillo, Elisa Gonzalez Boix, Christophe Scholliers | Short paper (MobiSys'23)

Demo and poster presentation at the 21st ACM International Conference on Mobile Systems, Applications, and Services (MobiSys'23).

Event-Based Out-of-Place Debugging Description:

2022-09-14 | **Tom Lauwaerts**, Carlos Rojas Castillo, Robbert Gurdeep Singh, Matteo Marra, Christophe Scholliers, Elisa Gonzalez Boix | Conference paper (MPLR'22)

I presented this work at the main track of the 19th International Conference on Managed Programming Languages & Runtimes (MPLR'22).