

Laurent Christophe

Research Software Engineer

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ABOUT ME

I hold a Ph.D. in Computer Science and I'm currently working as a Software Research Engineer at Sirris. My expertise includes program analysis, language implementation, functional programming, and, more recently, generative AI.

EDUCATION

- ▶ **Ph.D.** – Computer Science
Vrije Universiteit Brussel
2012 – 2026
Title:
Provenance-Aware Dynamic Analysis of JavaScript
Supervisors:
Prof. Dr. Coen De Roover
Prof. Dr. Wolfgang De Meuter
- ▶ **MSc (Eng)** – Computer Science
Université Libre de Bruxelles
2010 – 2012
Graduated with Great Distinction
(Top 25% of class)
- ▶ **BSc (Eng)** – Civil Engineering
Université Libre de Bruxelles
2007 – 2010

PROGRAMMING SKILLS

- ▶ Expert in:
JavaScript and TypeScript
- ▶ Competent in:
SQL, Java, Python, Ruby, Kotlin, C, C++, HTML, CSS, Scala, Haskell, Scheme, Prolog, LaTeX

PROFESSIONAL EXPERIENCE

- Sirris – Research Software Engineer**
Jul 2025 – Present
 - ▶ Advising companies for adopting generative AI
 - ▶ Developed multiple proof-of-concept systems:
Semantic search for matching tenders against CPV codes
Pipeline for parsing PDF with generative AI
- Vrije Universiteit Brussel – Consultant**
Oct 2023 – Jun 2025
 - ▶ Developed several web and mobile applications:
Prototype of EasyWanit: mobile app built with Ionic
La Nage Saint-Gilles: admin web app built with Express
Collectif Santé 1140: website built with Wordpress
- AppMap, USA – Software Engineer**
Mar 2021 – Sep 2023
 - ▶ Developed a JavaScript code instrumenter:
Recording of large volumes of execution data
Seamless integration with:
GitHub Actions, Node.js, Express, Mocha, Jest
CI/CD stack:
Travis, semantic-release, Prettier, ESLint, Mocha
 - ▶ Developed a flame graph visualization in Vue:
Interactive exploration of performance impact
Runs in the browser and within VS Code via Vue and React
Automated testing using Cypress and Chromatic
 - ▶ Contributed broadly across the toolchain:
Authored and reviewed hundreds of pull requests
- Vrije Universiteit Brussel – Researcher**
Sep 2012 – Dec 2020
 - ▶ Published in renowned international conferences:
ICSME, SANER, GPCE
 - ▶ Maintained extensive artifact records:
60+ npm packages with **650K+** downloads
 - ▶ Research supported:
Multiple publications and dozens of BA/MA theses
 - ▶ Contributed to open-source projects:
Node.js, Jest, ESLint, Acorn, Astring, Engine262
 - ▶ Collaborated with “Hack Your Future” Belgium
 - ▶ Served as Teaching Assistant:
Functional Programming course – 7 years
- Audaxis, Belgium – Intern**
Jun 2011 – Sep 2011
 - ▶ Developed a Java-based point-of-sale system
Integration with Compiere ERP

TOOLING EXPERIENCE

- ▶ **Frontend:** React, Vue.js, Ionic, Next.js, jQuery, Web Components
- ▶ **Backend:** Express, Spring, NestJS, Django, Flask, Ruby on Rails
- ▶ **Databases:** MySQL, MariaDB, SQLite, PostgreSQL
- ▶ **Testing:** xUnit, Jest, Mocha, QuickCheck, Cypress, Chromatic, Selenium
- ▶ **Version:** Git, GitHub, GitLab
- ▶ **Cloud:** AWS, Azure, Google Cloud Platform
- ▶ **CI/CD:** GitHub Actions, Jenkins, Travis CI
- ▶ **Packages:** npm, Maven, Gradle, pip, gem, bundler, Cabal
- ▶ **IDE:** VS Code, Eclipse, IntelliJ

COMMUNICATION PROTOCOLS

- ▶ HTTP, TCP/IP, SSL, WebSocket, POSIX Sockets, Bluetooth Low Energy (BLE)

LANGUAGE

- ▶ Native French speaker
- ▶ Fluent in English
- ▶ Basic knowledge of Dutch

MISCELLANEOUS

- ▶ Enthusiastic programmer and open-source contributor
- ▶ Creator of Aran, a JavaScript code instrumenter
<https://lachrist.github.io/aran>
- ▶ Head coach of the NSG swimming club in Saint-Gilles since 2011
- ▶ Multiple-time Belgian podium finisher in swimming

PUBLICATIONS

- 1 A. Stuker, A. Munsters, A. Luis Scull Pupo, L. **Christophe**, and E. Gonzalez Boix. "JASMAint: Portable Multi-language Taint Analysis for the Web". In: *Proceedings of the 22nd International Conference on Managed Programming Languages and Runtimes (MPLR)*. ACM. 2025
- 2 L. **Christophe**, C. De Roover, and W. De Meuter. "Aran: JavaScript Instrumentation for Heavyweight Dynamic Analysis". In: *Proceedings of the 23rd Belgium-Netherlands Software Evolution Workshop (BENEVOL)*, vol. 3941, pp. 97–114. CEUR Workshop Proceedings. 2024
- 3 M. Vandercammen, L. **Christophe**, D. Di Nucci, W. De Meuter, and C. De Roover. "Prioritising Server Side Reachability via Inter-process Concolic Testing". In: *The Art, Science, and Engineering of Programming*, 5. 2020
- 4 M. Vandercammen, L. **Christophe**, W. De Meuter, and C. De Roover. "Concolic Testing of Full-Stack JavaScript Applications". In: *Proceedings of the 17th Belgium-Netherlands Software Evolution Workshop (BENEVOL)*, vol. 2361, pp. 38–42. CEUR Workshop Proceedings. 2018
- 5 L. **Christophe**, C. De Roover, E. Gonzalez Boix, and W. De Meuter. "Orchestrating Dynamic Analyses of Distributed Processes for Full-Stack JavaScript Programs". In: *Proceedings of the 17th ACM SIGPLAN International Conference on Generative Programming (GPCE)*, pp. 107–118. ACM. 2018
- 6 A. Scull Pupo, L. **Christophe**, J. Nicolay, C. De Roover, and E. Gonzalez Boix. "Practical Information Flow Control for Web Applications". In: *Proceedings of the 18th International Conference on Runtime Verification (RV)*, vol. 11237, pp. 372–388. Springer. 2018
- 7 L. **Christophe**, W. De Meuter, E. Gonzalez Boix, and C. De Roover. "Linvail: A General-Purpose Platform for Shadow Execution of JavaScript". In: *Proceedings of the 23rd IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER)*, pp. 260–270. IEEE CS. 2016
- 8 L. **Christophe**, C. De Roover, and W. De Meuter. "Poster: Dynamic Analysis Using JavaScript Proxies". In: *Proceedings of the 37th IEEE International Conference on Software Engineering (ICSE)*, vol. 2, pp. 813–814. IEEE. 2015
- 9 L. **Christophe**, R. Stevens, C. De Roover, and W. De Meuter. "Prevalence and Maintenance of Automated Functional Tests for Web Applications". In: *Proceedings of the 30th International Conference on Software Maintenance and Evolution (ICSME)*, pp. 141–150. 2014
- 10 N. Cardozo Alvarez, L. **Christophe**, C. De Roover, and W. De Meuter. "Run-time Validation of Behavioral Adaptations". In: *Proceedings of 6th International Workshop on Context-Oriented Programming (COP)*. ACM. 2014