Timothé **Albouy**

PhD in Informatics · Cybersecurity Engineer

6 place du Président Kennedy, 92170, Vanves, France

(+33) 6 95 56 10 39 timothe.albouy@gmail.com timothealbouy.github.io TimotheAlbouy Timothé Albouy

Summary

I am a research scientist holding a PhD in distributed computing. My research interests include information security, distributed algorithms, and formal verification of complex systems.

Articles and Talks

Publications in International Journals

[1] T. Albouy, D. Frey, M. Raynal, and F. Taïani (2024), "Good-case early-stopping latency of synchronous Byzantine reliable broadcast: The deterministic case," *Distributed Computing*, 23 pages, DOI: 10.1007/s00446-024-00464-6°.

[2] T. Albouy, D. Frey, M. Raynal, and F. Taïani (2023), "Asynchronous Byzantine reliable broadcast with a message adversary," *Theoretical Computer Science*, 17 pages, DOI: 10.1016/J.TCS.2023.114110°.

Publications in International Conferences (Peer-Reviewed Papers)

[3] T. Albouy, D. Frey, R. Gelles, C. Hazay, M. Raynal, E. M. Schiller, F. Taïani, and V. Zikas, "Near-optimal communication Byzantine reliable broadcast under a message adversary," *28th Int'l Conference on Principles of Distributed Systems (OPODIS'24)*, DOI: 10.4230/LIPICS.OPODIS.2024.14°.

[4] T. Albouy, A. Fernández Anta, C. Georgiou, M. Gestin, N. Nicolaou, and J. Wang, "AMECOS: A modular event-based framework for concurrent object specification," *28th Int'l Conference on Principles of Distributed Systems (OPODIS'24)*, DOI: 10.4230/LIPICS.OPODIS.2024.4°.

[5] T. Albouy, D. Frey, R. Gelles, C. Hazay, M. Raynal, E.M. Schiller, F. Taïani, and V. Zikas (2024), "Brief announcement: Towards optimal communication Byzantine reliable broadcast under a message adversary," *38th Int'l Symposium on Distributed Computing (DISC'24)*, DOI: 10.4230/LIPIcs.DISC.2024.13°.

[6] T. Albouy, D. Frey, M. Raynal, and F. Taïani (2022), "A modular approach to construct signature-free BRB algorithms under a message adversary," *26th Int'l Conference on Principles of Distributed Systems (OPODIS'22)*, DOI: 10.4230/LIPIcs.OPODIS.2022.26°.

[7] T. Albouy, D. Frey, M. Raynal, and F. Taïani (2022), "Good-case early-stopping latency of synchronous Byzantine reliable broadcast: The deterministic case," *36th Int'l Symposium on Distributed Computing (DISC'22)*, DOI: 10.4230/LIPIcs.DISC.2022.4°.

Publications in International Conferences (Invited Papers)

[8] T. Albouy, D. Frey, M. Raynal, and F. Taïani (2021), "Byzantine-tolerant reliable broadcast in the presence of silent churn," *23rd Int'l Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS'21)*, DOI: 10.1007/978-3-030-91081-5_2°.

Articles under Submission

[9] T. Albouy, E. Anceaume, D. Frey, M. Gestin, A. Rauch, M. Raynal, and F. Taïani, "Asynchronous BFT asset transfer: quasi-anonymous, light, and consensus-free," arXiv:2405.18072°.

[10] T. Albouy, D. Frey, M. Gestin, M. Raynal, and F. Taïani, "Context-adaptive cooperation," arXiv:2311.08776°.

Invited Talks

[11] T. Albouy (November 2024), "Foundations of reliable cooperation under asynchrony, Byzantine faults, and message adversaries," IMDEA Networks Institute, Leganés, Spain.

[12] T. Albouy (June 2024), "AMECOS: a modular specification framework for concurrent objects and consistency," NPA team of LIP6, Paris, France.

[13] T. Albouy (March 2024), "Churn-tolerant consensus-free money transfer," ACES team of Télécom Paris, Palaiseau, France.

[14] T. Albouy (September 2023), "Distributed computing: a guided tour," IMDEA Networks Institute, Leganés, Spain.

PhD Thesis

[15] T. Albouy (2024), "Foundations of reliable cooperation under asynchrony, Byzantine faults, and message adversaries," Université de Rennes, `tel.archives-ouvertes.fr/tel-04764046`°.

Work Experience

IMDEA Networks Institute — **Leganés, Spain**
Visiting Scholar — 2023

- Designed a modular specification framework for distributed systems (AMECOS), addressing the limitations of traditional approaches (*e.g.*, sequential specifications)

IRISA/Inria (WIDE Team) — **Rennes, France**
PhD Student — 2021-2025

- Studied and designed lightweight modular distributed primitives to construct highly resilient applications (online payments, cloud computing, e-voting…)
- Supervised labs for the engineering school of the University of Rennes (ESIR)

IRISA/Inria (WIDE Team) — **Rennes, France**
Research Intern — 2021

- Designed and formally verified a Byzantine fault-tolerant dynamic payment system

Agence nationale de la sécurité des systèmes d'information (ANSSI) — **Paris, France**
Security Intern — 2020

- Designed a tool enhancing capitalization of Cyber Threat Intelligence (CTI) by security analysts

bySTAMP — **Vannes, France**
Programming Intern — 2018

- Implemented web services and a back-office for a loyalty program company

Teaching

École Supérieure d'Ingénieurs de Rennes (ESIR) — **Rennes, France**
Teaching Assistant — 2022-2025

- **Systems** Basics of UNIX (shell scripting) and low-level programming (assembly, C)
- **Language Theory & Compilation** Semester project: creating a full-fledged compiler (lexical, syntactic and semantic analysis, intermediate representation (3-address code), and transpiling to a target language)
- **Parallel Programming** Basics of process synchronization concepts and primitives in Java (locks, semaphores, monitors…)

Education

Université de Rennes — Rennes, France

PhD in Informatics — 2021-2025

- Dissertation entitled *"Foundations of Reliable Cooperation under Asynchrony, Byzantine Faults, and Message Adversaries"*

Université de Rennes — Rennes, France

Masters Degree (M2 SIF) — 2020-2021

- Double curriculum specializing in Research in Informatics

École Nationale Supérieure d'Ingénieurs de Bretagne Sud (ENSIBS) — Vannes, France

Diplôme d'Ingénieur — 2018-2021

- Masters Studies in Cybersecurity

Institut Universitaire de Technologie (IUT) de Vannes — Vannes, France

Diplôme Universitaire de Technologie (DUT) — 2016-2018

- Undergraduate Studies in Informatics

Collège Lycée Prépa St-François-Xavier — Vannes, France

Baccalauréat Scientifique — 2016

- A-levels equivalent, with honors

Languages

- **French** Mother tongue
- **English** Good command (C2 level)
- **German** Basic knowledge (B2 level)
- **Spanish** Notions

Computer Skills

Programming, Audio/graphics edition, Operating systems, (no)SQL databases, Front/back-end web development, LaTeX/Typst, Project management tools and methods, System and network administration

Interests

- **Sport** Cycling, football, hiking, ski, calisthenics, powerlifting, indoor climbing
- **Ethical hacking** Capture The Flag (CTF) competitions, hackathons, lockpicking
- **Music** Classical, jazz, ambient, electronic, rock, practice of choir singing
- **Scouting** Lead a group of scouts for excursions and summer camps; teach life in nature (bivouac, woodcraft, ropework…)