Quentin Guilloteau

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Professional and Research Experience

2025
Starting Research Position Inria (Feb. 1st 2025 - Current),
Avalon team, LIP, ENS-Lyon, Inria, Lyon, France

2023 - 2024
Post-Doctoral Researcher (Dec. 1st 2023 - Dec. 31st 2024),
HPC Group, DMI, University of Basel, Basel, Switzerland

2020 - 2023
PhD Student (Oct. 1st 2020 - Nov. 30th 2023),
Ctrl-A and Datamove teams, LIG, Univ. Grenoble Alpes, Grenoble, France

2020
Research Intern (Feb. 3rd 2020 - Jun. 25 th 2020),
Ctrl-A and Datamove teams, LIG, Univ. Grenoble Alpes, Grenoble, France

2019
Software Intern (June 24th 2019 - Sept. 13th 2019),
Tait Communications, Christchurch, New-Zealand

Education

2020 - 2023
PhD in Computer Science,
Ctrl-A and Datamove teams, LIG, Univ. Grenoble Alpes, Grenoble, France. "*Control-based runtime management of HPC systems with support for reproducible experiments*" (tel-04389290)
Advisors: Eric Rutten and Olivier Richard
Jury: Alexandru Costan, Alessandro Papadopoulos, Fabienne Boyer, Georges Da Costa, and Noël de Palma
Defense: December 11th 2023

2017 - 2020
Engineering and Master Degree,
Grenoble-INP ENSIMAG and MoSIG, Univ. Grenoble Alpes, Grenoble, France. Specialization in distributed systems.

2015 - 2017
Intensive 2-year degree in Math, Physics, and Computer Science,
Lycée Camille Guerin, Poitiers, France

2015
Baccalauréat in Sciences, with option in Computer Science Highest Honours
Lycée (High School) Isaac de l'étoile, Poitiers, France

Teaching

University of Basel, Basel, Switzerland (28h)

2024
High Performance Computing (19h/year)
 lecture and practicals, postgraduate

2024
Reproducibility and Performance of Privacy-Enhancing Technologies (9h/year)
 lecture and mentoring, undergraduate

Polytech Grenoble, Univ. Grenoble Alpes, Grenoble, France (127h)

2022 - 2023

Introduction to C and Algorithms (17h/year)
lectures and practicals, undergraduate

2020 - 2022

Algorithms and Imperative Programming (38.5h/year)
practicals and labs, undergraduate (77h total)

2020 - 2022

Algorithms and Modelisation (16.5h/year)
practicals, undergraduates (33h total)

UFR IM2AG , Univ. Grenoble Alpes, Grenoble, France (15.5h)

2021 - 2022

Parallel Algorithms (9.5h/year)
practicals, postgraduates

2020 - 2021

Software Project (6h/year)
mentoring, undergraduates

Supervision

2024

Antoine Waehren: *Study of the State of the Practice of Artifacts Sharing in High Performance Computing Conferences*, B.Sc. student, University of Strasbourg, Strasbourg, France (10.5281/zenodo.13860834)
Co-supervision with Florina M. Ciorba

2023

Samuel Brun: *Étude du phénomène Stat-Storm - Limitation des appels systèmes pour les systèmes de fichiers distribués de type store*, M.Sc. student, Polytech Grenoble, Grenoble, France (hal-04197724)
Co-supervision with Olivier Richard

2023

Alexandre Lithaud: *Contribution au projet NixOS Compose*, M.Sc. student, Polytech Grenoble, Grenoble, France (hal-04197720)
Co-supervision with Olivier Richard

2023

Rosa Pagano: *Adaptive control of HPC clusters for server overload avoidance*, M.Sc. student, Politecnico di Milani, Milan, Italia (hal-04390558)
Co-supervision with Bogdan Robu, Sophie Cerf, Raphaël Bleuse, and Eric Rutten

2022

Ahmadreza Ahmadi: *Model-Free Control Approach for the Collection of Resources in High Performance Computing*, M.Sc. student, MiSCIT, Univ. Grenoble Alpes, Grenoble, France
Co-supervision with Bogdan Robu, Raphaël Bleuse, and Eric Rutten

2022

Ali Noura: *Integration of Scheduler Knowledge into CiGri Control Loop*, M.Sc. student, MiSCIT, Univ. Grenoble Alpes, Grenoble, France (hal-03826649)
Co-supervision with Bogdan Robu, Raphaël Bleuse, and Eric Rutten

2021

David Donkor: *Controlling a cluster of computing resources: the model free control approach*, M.Sc. student, MiSCIT, Univ. Grenoble Alpes, Grenoble, France (hal-03292373)
Co-supervision with Bogdan Robu, and Eric Rutten

Other Activities

2026 Organizer of the REPRO-HPCworkshop at ISC26

2022 Reviewer for CCGrid25, COMPAS26 (PC), ContinuumRI25, HPDC26, IC2E25, JOSS, IPDPS22, IPDPS25, PPoPP25, UCC25 (PC)

2024	Member of PPoPP'25, EuroSys'25, EuroSys'26, ALENEX26, SC24, SC25, SC26 Reproducibility Committees
2022	Co-chair of the "Control for Computing" session at CCTA 2022
2025	Chair of the "Cloud and Continuum" session at COMPAS25
2022 - 2023	Member of the regional jury for the "Trophés NSI", a programming competition for French high school students
2022 - 2024	Animations of the tutorial for Control Theory for Computer Scientists [U1]: 8 sessions, about 120 participants in total
2022	Animations of the tutorial for NixOS-Compose [U2]: 3 sessions, about 60 participants in total
2025	Member of the Kairns collective, and co-leader from June 2025 to December 2025

Languages

English:	Fluent (TOEIC: 960/990)
French:	Native
Russian:	Beginner

Publications

International Journals

[J1] Q. Guilloteau, R. Bleuse, S. Cerf, B. Robu, R. Pagano and E. Rutten, *Autonomic Resource Harvesting in HPC: Control Methods and their Reusability*, in ACM Transactions on Autonomous and Adaptive Systems (TAAS). [Online]. Available: https://inria.hal.science/hal-05234898/

[J2] J.H. Müller Korndörfer, A. Mohammed, A. Eleliemy, Q. Guilloteau, R. Krummenacher, F. M. Ciorba*A Comparative Study of OpenMP Scheduling Algorithm Selection Strategies* in IEEE Access [Online]. Available: https://arxiv.org/abs/2507.20312

International Conferences

[C1] Q. Guilloteau, O. Richard, B. Robu, and E. Rutten, *Controlling the Injection of Best-Effort Tasks to Harvest Idle Computing Grid Resources*, in ICSTCC 2021 - 25th International Conference on System Theory, Control and Computing, Oct. 2021, pp. 1–6. doi: 10.1109/ICSTCC52150.2021.9607292.

[C2] Q. Guilloteau, B. Robu, C. Join, M. Fliess, É. Rutten, and O. Richard, *Model-free control for resource harvesting in computing grids*, in CCTA 2022 - Conference on Control Technology and Applications, CCTA 2022, Aug. 2022. doi: 10.1109/CCTA49430.2022.9966035.

[C3] Q. Guilloteau, J. Bleuzen, M. Poquet, and O. Richard, *Painless Transposition of Reproducible Distributed Environments with NixOS Compose*, in CLUSTER 2022 - IEEE International Conference on Cluster Computing, Sep. 2022, pp. 1–12. [Online]. Available: https://hal.science/hal-03723771

[C4] Q. Guilloteau, F.M. Ciorba, M. Poquet, D. Goepp and O. Richard, *Longevity of Artifacts in Leading Parallel and Distributed Systems Conferences: a Review of the State of the Practice in 2023*, in ACM Conference on Reproducibility and Replicability (REP 2024), Jun. 2024 [Online]. Available: https://hal.science/hal-04562691

[C5] R. Pagano, S. Cerf, B. Robu, Q. Guilloteau, R. Bleuse, E. Rutten, *Making control in High Performance Computing for overload avoidance adaptive in time and job size*, in CCTA 2024 - Conference on Control Technology and Applications, CCTA 2024, Aug. 2024 [Online]. Available: https://hal.science/hal-04669743

[C6] Quentin Guilloteau, Antoine Waehren, Florina M. Ciorba, *Longitudinal Study of the Software Environments Produced by Dockerfiles from Research Artifacts: Initial Design (Short paper)*, in ACM Conference on Reproducibility and Replicability (REP 2025), June 2025. [Online]. Available: https://hal.science/hal-05163884

National Conferences

[N1] Q. Guilloteau, O. Richard, E. Rutten, and B. Robu, *Collecte de ressources libres dans une grille en préservant le système de fichiers : une approche autonomique*, in COMPAS 2021 - Conférence d'informatique en Parallélisme, Architecture et Système., Jul. 2021, pp. 1–11. [Online]. Available: https://inria.hal.science/hal-03282727

[N2] Q. Guilloteau, J. Bleuzen, M. Poquet, and O. Richard, *Transposition d'environnements distribués reproductibles avec NixOS Compose*, in COMPAS 2022 - Conférence francophone d'informatique en Parallélisme, Architecture et Système, Jul. 2022, pp. 1–9. [Online]. Available: https://hal.science/hal-03696485

[N3] Q. Guilloteau, O. Richard, and É. Rutten, *Étude des applications Bag-of-Tasks du méso-centre Gricad*, in COMPAS 2022 - Conférence francophone d'informatique en Parallélisme, Architecture et Système, Jul. 2022, pp. 1–7. [Online]. Available: https://hal.science/hal-03702246

[N4] Q. Guilloteau, A. Faure, M. Poquet, and O. Richard, *Comment rater la reproductibilité de ses expériences ?*, in ComPAS 2023 Conférence francophone en informatique, Jul. 2023, p. à paraître. [Online]. Available: https://hal.science/hal-04132438

[N5] Q. Guilloteau, J. H. Muller Korndorfer, F. M. Ciorba. *Seamlessly Scaling Applications with DAPHNE*, in COMPAS 2024 - Conférence d'informatique en Parallèlisme, Architecture et Système, Jul. 2024, pp. 1-11. [Online]. Available: https://hal.science/hal-04637841

[N6] D. Goepp, S. Brun, Q. Guilloteau, O. Richard. *Un prototype de cache de métadonnées pour le passage à l'échelle de NixOS-Compose*, in COMPAS 2024 - Conférence d'informatique en Parallèlisme, Architecture et Système, Jul. 2024, pp. 1-8. [Online]. Available https://hal.science/hal-04632952

Thesis

[T1] Q. Guilloteau, *Minimizing Cluster Under-use using a Control-Based Approach,*, Master Thesis, 2020. [Online]. Available: https://inria.hal.science/hal-03167242

[T2] Q. Guilloteau, *Control-based runtime management of HPC systems with support for reproducible experiments,*, PhD Thesis, 2023. [Online]. Available: https://hal.science/tel-04389290

Tutorials

[U1] Q. Guilloteau, S. Cerf, E. Rutten, R. Bleuse, and B. Robu, *Under Control: A Control Theory Introduction for Computer Scientists*, in ACSOS 2024 - International Conference on Autonomic Computing and Self-Organizing Systems, [Online]. Available: https://hal.science/hal-04666859

[U2] Q. Guilloteau, J. Bleuzen, M. Poquet, and O. Richard, *Tutorial: Reproducible distributed environments with NixOS Compose*, [Online]. Available: https://hal.science/hal-04460307

Workshops, Working Papers

[W1] Q. Guilloteau, *Adaptive Parallel Merge Sort in Rust*, Jun. 2019. [Online]. Available: https://hal.science/hal-04078798

[W2] Q. Guilloteau, *Parallel Dithering: How Fast Can We Go ?*, Mar. 2022. [Online]. Available: https://hal.science/hal-03594790

[W3] Q. Guilloteau, *Simulating a Multi-Layered Grid Middleware*, May 2023. [Online]. Available: https://hal.science/hal-04101015

[W4] Q. Guilloteau, O. Richard, R. Bleuse, and E. Rutten, *Folding a Cluster containing a Distributed File-System*, JLESC 2023. [Online]. Available: https://hal.science/hal-04038000

[W5] Q. Guilloteau, M. Poquet, J. H Müller Korndörfer, F. M Ciorba, *Artifact Evaluations as Authors and Reviewers : Lessons, Questions, and Frustrations*, Community Workshop on Practical Reproducibility in HPC 2024. [Online]. Available: https://hal.science/hal-04764265/

Posters

[P1] Q. Guilloteau, *Autonomic Approach to the Runtime Management of HPC Cluster Resources*, LIG PhD Day, Apr. 2022. [Online]. Available: https://hal.science/hal-04570283

[P2] Q. Guilloteau, F. M. Ciorba, *Reproducibility in Parallel and Distributed Computing: Challenges, State-of-the-practice, Limitations, and Opportunities*, Swiss Reproducibility Conference, June 2024. [Online]. Available: https://hal.science/hal-04601351

[P3] J. H Müller Korndörfer, A. Mohammed, A. Eleliemy, Q. Guilloteau, R. Krummenacher, F. M. Ciorba, *A Comparative Study of OpenMP Scheduling Algorithm Selection Strategies*, SC25, November 2025

[P4] R. Krummenacher, Q. Guilloteau, J. H. Müller Korndörfer, F. M. Ciorba *Seamless Scaling of Applications Across Programming Models*, SC25, November 2025

Software

[S1] O. Richard, Q. Guilloteau, J. Bleuzen, M. Poquet, *NixOS-Compose*, Licence: MIT, https://gitlab.inria.fr/nixos-compose/nixos-compose