

# Raphaël BLEUSE

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French and Swiss citizenships

## Curriculum Vitae (updated 2024-08-19)

### Professional Experiences

2019	<b>Associate Professor</b> , IUT 2, Univ. Grenoble Alpes, Grenoble, France
2017–2018	<b>Research Associate</b> , PCOG team, FSTC, University of Luxembourg, Luxembourg Coordination of the development of the ILNAS-UL Master “Smart Secure ICT for Business Innovation”.
2016–2017	<b>Teaching Assistant</b> , IUT 2, Univ. Grenoble Alpes, Grenoble, France 50% teaching, 50% research.

### Education

2013–2017	<b>Ph.D. in Computer Science</b> , DataMove team, LIG, Univ. Grenoble Alpes, Grenoble, France “Apprehending heterogeneity at (very) large scale”. Advisors: Grégory MOUNIÉ and Denis TRYSTRAM. Committee: Lionel EYRAUD-DUBOIS, Nectarios KOZIRIS, Vitus J. LEUNG, Alix MUNIER, and Yves ROBERT.
2010–2013	<b>Engineer’s degree</b> , Ensimag, Grenoble INP, Grenoble, France Superior National School of Applied Mathematics and Computer Science. Equivalent of a Master Degree of Science in Engineering, specialization in <i>Information Systems Engineering</i> .

### Teaching (911 h)

#### IUT 2, Univ. Grenoble Alpes, Grenoble, France (748 h)

2022–2023	, lectures/tutorials/practicals, undergraduate, 24 h
2021–2023	Computer Architecture, tutorials/practicals, undergraduate, 40 h/year (60 h total)
2021–2023	Introduction to Continuous Integration, lectures/practicals, undergraduate, 28 h/year (56 h total)
2019–2023	Architecture of Networks, tutorials/practicals, undergraduate, 32 h/year (128 h total)
2019–2023	C Language, lectures/practicals, undergraduate, 15 h/year (58 h total)
2019–2023	Methodology of Application Development, project follow-up, undergraduate, 30 h/year (120 h total)
2019–2022	Advanced Algorithmics – C++ Language, practicals, undergraduate, 16 h/year (48 h total)
2019–2022	Object-Oriented Modeling, lectures/tutorials/practicals, undergraduate, 37 h/year (110 h total)
2016–2017	Advanced Databases, lectures/tutorials/practicals, undergraduate, 20 h
2016–2017	Computer Architecture and C Language, practicals, undergraduate, 16 h
2016–2017	Distributed Programming, practicals, undergraduate, 24 h
2016–2017	Introduction to Algorithms and Programming, lectures/tutorials/practicals, undergraduate, 24 h
2016–2017	Introduction to Databases, lectures/tutorials/practicals, undergraduate, 30 h
2016–2017	Principles of Operating Systems, tutorials/practicals, undergraduate, 30 h

#### Ensimag, Grenoble INP, Grenoble, France (18 h)

2015–2016	Algorithms and Data structures, tutorials, undergraduate, 18 h
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#### Polytech, Univ. Grenoble Alpes, Grenoble, France (15 h)

2015–2016	Computers: Hardware and Software Architectures, tutorials, undergraduate, 15 h
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#### Esisar, Grenoble INP, Valence, France (130 h)

2013–2015	Communicating Applications, practicals, postgraduate, 12 h/year (24 h total)
2013–2015	Distributed Programming, practicals, postgraduate, 21 h/year (42 h total)
2013–2015	Introduction to Databases, tutorials/practicals, undergraduate, 18 h/year (36 h total)
2013–2015	Network Architecture and Protocols, practicals, postgraduate, 14 h/year (28 h total)

## Supervision

2023

Lilian GARDON, *Optimization of a data structure for scheduling computation and simulation*, B.Sc. student, IUT 2, Univ. Grenoble Alpes, Grenoble, France

2023

Rosa PAGANO, *Energy/Performance Trade-offs for Digital Soberness*, M.Sc. student, Politecnico Milano, Milan, Italy

Co-supervision with Quentin GUILLOTEAU & Bogdan ROBU.

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 Quentin GUILLOTEAU & Bogdan ROBU.

2022

Ali El Hadi NOURA, *Integration of Scheduler Knowledge into CiGri Control Loop*, M.Sc. student, MiSCIT, Univ. Grenoble Alpes, Grenoble, France

Co-supervision with Quentin GUILLOTEAU & Bogdan ROBU.

2022

Jolahn VAUDEY, *Comparison of Controller Synthesis and Scheduling Techniques for Dynamically Reconfigurable Allocation of Tasks on Computing Resources*, M.Sc. student, MoSIG, Univ. Grenoble Alpes, Grenoble, France

Co-supervision with Gwenaël DELAVAL.

2020–2021

Sophie CERF, *Improving the Performance and Energy Efficiency of HPC Applications Using Autonomic Computing Techniques*, postdoctoral researcher

Co-supervision with Éric RUTTEN.

2021

Ismail HAWILA, *Adaptive Control Approach for Power Regulation in High Performance Computing Systems*, M.Sc. student, MiSCIT, Univ. Grenoble Alpes, Grenoble, France

Co-supervision with Sophie CERF & Éric RUTTEN.

2020

Manal BENAÏSSA, *Relationships Between Scheduling and Autonomic Computing Techniques for Parallel Computing Resources Management*, M.Sc. student, MoSIG, Univ. Grenoble Alpes, Grenoble, France

Co-supervision with Éric RUTTEN.

2017

Marc-Alexandre OGANDAGA CAPITO, *Improving Visualization Techniques for Large Scale Traces*, M.Sc. student, MoSIG, Univ. Grenoble Alpes, Grenoble, France

Co-supervision with Denis TRYSTRAM.

2016

Matthias KOHL, *Efficient Shapes for Tasks' Allocation within Extreme Scale Computing Platform*, M.Sc. student, MoSIG, Univ. Grenoble Alpes, Grenoble, France

Co-supervision with Denis TRYSTRAM.

## Other Activities

### Program committees

2023

37<sup>th</sup> IEEE International Parallel & Distributed Processing Symposium (**IPDPS 2023**)

2019

33<sup>rd</sup> IEEE International Parallel & Distributed Processing Symposium (**IPDPS 2019**)

### Organizing committees

2016

22<sup>nd</sup> International European Conference on Parallel and Distributed Computing (**Euro-Par 2016**), Grenoble, France

2014

11<sup>th</sup> Workshop on “New Challenges in Scheduling Theory”, Aussois, France

### Refereeing

Intl. journals · 5  
Concurrency and Computation: Practice and Experience; Journal of Parallel and Distributed Computing; Parallel Computing; RAIRO-Operations Research.

Intl. conferences · 10  
IEEE Intl. Conference on Autonomic Computing and Self-Organizing Systems (**ACSOS**); IEEE/ACM Intl. Symposium on Cluster, Cloud and Grid Computing (**CCGRID**); Intl. Conference on Control, Decision and Information Technologies (**CoDIT**); Intl. European Conference on Parallel and Distributed Computing (**Euro-Par**); Intl. Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Platforms (**HeteroPar**); Intl. Symposium on Parallel and Distributed Computing (**ISPDC**); Intl. Symposium on Experimental Algorithms (**SEA**); Intl. Conference on Software, Telecommunications and Computer Networks (**SoftCOM**); ACM Symposium on Parallelism in Algorithms and Architectures (**SPAA**).

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## Languages

French mother tongue  
English fluent (*TOEFL iBT 103/120*)

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## Publications & Communications

### International journals

- [J1] R. BLEUSE et al. "Scheduling Independent Moldable Tasks on Multi-Cores with GPUs". In: *IEEE Transactions on Parallel and Distributed Systems* 28.9 (Sept. 2017), pp. 2689–2702. DOI: 10.1109/TPDS.2017.2675891.
- [J2] R. BLEUSE et al. "Scheduling independent tasks on multi-cores with GPU accelerators". In: *Concurrency and Computation: Practice and Experience* 27.6 (2015), pp. 1625–1638. DOI: 10.1002/cpe.3359.

### International conferences

- [C1] R. PAGANO et al. "Making Control in High Performance Computing for Overload Avoidance Adaptive in Time and Job Size". In: *CCTA*. IEEE, Aug. 2024.
- [C2] I. HAWILA et al. "Adaptive Power Control for Sober High-Performance Computing". In: *CCTA*. IEEE, Aug. 2022, pp. 403–410. DOI: 10.1109/CCTA49430.2022.9966115.
- [C3] S. CERF et al. "Sustaining Performance While Reducing Energy Consumption: A Control Theory Approach". In: *Euro-Par*. Vol. 12820. Lecture Notes in Computer Science. Springer, Sept. 2021, pp. 334–349. DOI: 10.1007/978-3-030-85665-6\_21.
- [C4] M. OLSZEWSKI et al. "Visualizing the Template of a Chaotic Attractor". In: *Graph Drawing*. Vol. 11282. Lecture Notes in Computer Science. Springer, Sept. 2018, pp. 106–119. DOI: 10.1007/978-3-030-04414-5\_8.
- [C5] R. BLEUSE et al. "Interference-Aware Scheduling using Geometric Constraints". In: *Euro-Par*. Vol. 11014. Lecture Notes in Computer Science. Springer, Aug. 2018, pp. 205–217. DOI: 10.1007/978-3-319-96983-1\_15.
- [C6] R. BLEUSE, G. LUCARELLI, and D. TRYSTRAM. "A Methodology for Handling Data Movements by Anticipation: Position Paper". In: *Euro-Par Workshops*. Vol. 11339. Lecture Notes in Computer Science. Springer, Aug. 2018, pp. 134–145. DOI: 10.1007/978-3-030-10549-5\_11.
- [C7] R. BLEUSE et al. "Scheduling Data Flow Program in XKaapi: A New Affinity Based Algorithm for Heterogeneous Architectures". In: *Euro-Par*. Vol. 8632. Lecture Notes in Computer Science. Springer, Aug. 2014, pp. 560–571. DOI: 10.1007/978-3-319-09873-9\_47.

### International workshops

- [W1] R. BLEUSE et al. "Interference-Aware Scheduling with 2D-Torus as a Case Study". Presented at *ECCO XXX*. Koper, Slovenia, May 2017.
- [W2] R. BLEUSE, G. LUCARELLI, and D. TRYSTRAM. "Convex Allocations under IO Constraints". Presented at the *5<sup>th</sup> JLESC Workshop*. Lyon, France, June 2016.
- [W3] R. BLEUSE, G. LUCARELLI, and D. TRYSTRAM. "Convex Allocations under IO Constraints". Presented at *New Challenges in Scheduling Theory*. Aussois, France, Mar. 2016.
- [W4] R. BLEUSE. "Affinity Scheduling: from Quantitative to Qualitative". Presented at the *2<sup>nd</sup> JLESC Workshop*. Chicago, USA, Nov. 2014.

### Theses

- [T1] R. BLEUSE. "Apprehending heterogeneity at (very) large scale". PhD thesis. LIG, Univ. Grenoble Alpes, Grenoble, France, Oct. 2017.
- [T2] R. BLEUSE. "Utilisation efficace des accélérateurs GPU – Ordonnancement sur machines hybrides". MA thesis. Ensimag, Grenoble INP, Grenoble, France, June 2013.

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## Software

- [SW1] R. BLEUSE et al., *cate: Chaotic Attractor TEmplate* 2018. LIC: LGPL-3.0-only. URL: <https://pypi.org/project/cate>, VCS: <https://gitlab.inria.fr/cate/cate>.
- [SW2] R. BLEUSE, *procset.py* 2017. LIC: LGPL-3.0-only. URL: <https://procset.readthedocs.io/en/stable>, VCS: <https://gitlab.inria.fr/bleuse/procset.py>.