

Loïc Pottier

PhD in Computer Science

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French Nationality

Employments

- 2020 – **Computer Scientist**, *University of Southern California*, Los Angeles, USA. I am working within the Science Automation Technologies group led by Dr Ewa Deelman at the Information Science Institute, University of Southern California. I am working on scientific workflows management (scheduling and data management) for large-scale infrastructures, with a strong focus on HPC system.
- 2019 – 2020 **Postdoctoral scholar – Research Associate**, *University of Southern California*, Los Angeles, USA. I have been working under the supervision of Dr Ewa Deelman in the Science Automation Technologies group at the Information Science Institute, University of Southern California. I have been working on scientific workflows management (scheduling and data management) for large-scale infrastructures, with a strong focus on HPC system.
- 2015 – 2018 **Teaching Assistant in Computer Science**, *École Normale Supérieure de Lyon and University of Lyon*. I have been a teaching assistant for 3 years during my PhD. See below for the list of classes.
- 2015 – 2018 **PhD in Computer Science**, *LIP laboratory – École Normale Supérieure de Lyon*. “Co-scheduling for large-scale applications: memory and resilience”, under the supervision of Anne Benoit and Yves Robert in the ROMA team, defended on September 18, 2018
- 2016 (3 months) **Research intern**, *Argonne National Laboratory*, Chicago, USA. I have been working with Swann Perarnau on scheduling and data management problems for the new many-core architectures that exhibit new memory hierarchies, such as Xeon Phi Knights Landing.

Education

- 2015 – 2018 **PhD in Computer Science**, *LIP laboratory – École Normale Supérieure de Lyon*. Advisors: Anne Benoit and Yves Robert, defended on September 18, 2018
- 2013 – 2015 **Master of Science**, *University of Versailles, with High Honors («Bien»)*. Major in Computer Science, specialized in High Performance Computing
- 2010 – 2013 **Bachelor of Science**, *University of Lower Normandy, with Honors («Assez Bien»)*. Major in Computer Science
- 2010 **High school diploma**, Caen, Lower Normandy, *with Honors («Assez Bien »)*. Major in Science, minor in Mathematics

Publications

– authors are listed in alphabetical order except for [C1], [C2] and [W1]

Thesis

[T1] Loïc Pottier. “Co-scheduling for large-scale applications : memory and resilience”. PhD thesis. Université de Lyon, Sept. 2018.

Book Chapters

- [B1] G. Aupy, A. Benoit, L. Pottier, P. Raghavan, Y. Robert, and M. Shantharam. “Co-scheduling high-performance computing applications”. In: *Big Data Management and Processing*. Ed. by K.-C. Li, H. Jiang, and A. Zomaya. Chapman and Hall/CRC Press, 2017. Chap. 5. ISBN: 9781351650045.

Articles in International Refereed Journals

- [J1] G. Aupy, A. Benoit, B. Goglin, L. Pottier, and Y. Robert. “Co-scheduling HPC workloads on cache-partitioned CMP platforms”. In: *International Journal of High Performance Computing Applications* (Apr. 2019). DOI: 10.1177/1094342019846956.
- [J2] G. Aupy, A. Benoit, S. Dai, L. Pottier, P. Raghavan, Y. Robert, and M. Shantharam. “Co-scheduling Amdahl applications on cache-partitioned systems”. In: *International Journal of High Performance Computing and Applications* (2017). DOI: 10.1177/1094342017710806.
- [J3] A. Benoit, L. Pottier, and Y. Robert. “Resilient co-scheduling of malleable applications”. In: *International Journal of High Performance Computing and Applications* (2017). DOI: 10.1177/1094342017704979.

Articles in International Refereed Conferences

- [C1] E. Deelman et al. “Cyberinfrastructure Center of Excellence Pilot: Connecting Large Facilities Cyberinfrastructure”. In: *15th International Conference on eScience (eScience)*. Funding Acknowledgments: NSF 1842042. San Diego, CA, USA, 2019.
- [C2] S. Thomas, M. Wyatt, T. M. A. Do, L. Pottier, R. Ferreira da Silva, H. Weinstein, M. A. Cuendet, T. Estrada, E. Deelman, and M. Taufer. “Characterization of In Situ and In Transit Analytics of Molecular Dynamics Simulations for Next-generation Supercomputers”. In: *15th International Conference on eScience (eScience)*. Funding Acknowledgments: NSF 1741040. 2019, pp. 188–198. DOI: 10.1109/eScience.2019.00027.
- [C3] G. Aupy, A. Benoit, B. Goglin, L. Pottier, and Y. Robert. “Co-scheduling HPC workloads on cache-partitioned CMP platforms”. In: *IEEE International Conference on Cluster Computing, CLUSTER 2018, Belfast, UK, September 10-13*. IEEE. Sept. 2018. DOI: 10.1109/CLUSTER.2018.00052.
- [C4] A. Benoit, S. Perarnau, L. Pottier, and Y. Robert. “A performance model to execute workflows on high-bandwidth-memory architectures”. In: *47th International Conference on Parallel Processing, ICPP 2018, Eugene, USA, August 13-16*. Aug. 2018. DOI: 10.1145/3225058.3225110.
- [C5] A. Benoit, L. Pottier, and Y. Robert. “Resilient application co-scheduling with processor redistribution”. In: *45th International Conference on Parallel Processing, ICPP 2016, Philadelphia, USA, August 16-19*. Aug. 2016. DOI: 10.1109/ICPP.2016.21.

Articles in International Refereed Workshops

- [W1] R. Mitchell, L. Pottier, S. Jacobs, R. Ferreira da Silva, M. Rynge, K. Vahi, and E. Deelman. “Exploration of Workflow Management Systems Emerging Features from Users Perspectives”. In: *First International Workshop on Big Data Tools, Methods, and Use Cases for Innovative Scientific Discovery (BTSD)*. Funding Acknowledgments: NSF 1842042. 2019.
- [W2] G. Aupy, A. Benoit, L. Pottier, P. Raghavan, Y. Robert, and M. Shantharam. “Co-scheduling algorithms for cache-partitioned systems”. In: *19th Workshop on Advances in Parallel and Distributed Computational Models APDCM 2017*. IEEE Computer Society Press, 2017. DOI: 10.1109/IPDPSW.2017.60.

Internships

- 2015 **Intern**, *École Normale Supérieure de Lyon*, Lyon, France. I have worked on scheduling (6 months) problems and on algorithms for detecting and correcting errors, under the supervision of Yves Robert and Anne Benoit in the research team ROMA.
- 2013 **Intern**, *Institut de Recherche pour le Développement (IRD)*, Sète, France. The aim was (3 months) to process GPS data from fishing boats, the data set was consistent (more than one million lines). The final goal was to build a geographic information system (GIS) to visualize the data.

Teaching

- 2017 – 2018 Master – Parallel algorithms (22h, University of Lyon)
Master – Distributed algorithms (10h, University of Lyon)
Bachelor – Programming 1 (32h, ENS de Lyon)
- 2016 – 2017 Bachelor – ASR2: Advanced Computer Architecture and Network (32h, ENS de Lyon)
Bachelor – Programming 1 (32h, ENS de Lyon)
- 2015 – 2016 Master – Image Processing and Computational Geometry (20h, ENS de Lyon)
Bachelor – ASR1 : Computer Architecture and Network (6h, ENS de Lyon)
Bachelor – ALGO2 : Advanced Algorithms (32h, ENS de Lyon)

Languages skills

French **Native.**

English **Fluent.**

Computer skills

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|-------------------|--|-------------|--|
| Programming | C, C++, Python, R, Bash, \LaTeX , Rust (beginner). | Parallelism | OpenMP, MPI, Parallel architectures. |
| Operating Systems | Unix, System Programming. | Theory | Scheduling, Complexity Theory, Algorithm Design. |

Collectives responsibilities

Administrative

- 2017-2018 Elected representative for non-tenured members at the LIP (ENS Lyon computer science laboratory) council, co-organized a two-days seminar for PhD students.

Program Committee

- 2019 PPAM, ICPP, eScience Workshops, EuroPar Workshops

Refereeing

- | | | | |
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| 2019 | PPAM, ICPP, IJHPCA, Computing Journal, eScience Workshops, EuroPar Workshops | 2018 | IJHPCA, SUSCOM |
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References

Anne Benoit

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Yves Robert

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Swann Perarnau

Mathematics and Computer Science

Argonne National Laboratory

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