

François Trahay

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Research interests

- High performance computing.
- Message passing communication libraries, MPI.
- Multicore architectures, multi-threading.
- Hybrid programming models (MPI + threads).
- Fault tolerance.
- Performance analysis.

Education

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| 2011 | Associate professor at Télécom SudParis. |
| june – dec 2010 | Post-doc at Riken, University of Tokyo. |
| oct 2009 – june 2010 | Temporary assistant professor, University of Bordeaux. |
| 2006 – 2009 | PhD thesis on interactions between multithreading and communications, supervised by R. Namyst and A. Denis, LaBRI, INRIA Bordeaux, University of Bordeaux. |
| 2004 – 2006 | Master of Science in Cryptology and IT security, University of Bordeaux. |

Publications

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| 2011 | An open-source tool-chain for performance analysis. K. Coulomb, A. Degomme, M. Faverge, F. Trahay, <i>In the 5th parallel Tools Workshop</i> . |
| 2011 | A sampling-based approach for communication libraries auto-tuning. É. Brunet, F. Trahay, R. Namyst, A. Denis, <i>International Conference on Cluster Computing (IEEE Cluster)</i> . |
| 2011 | EZTrace : a generic framework for performance analysis. F. Trahay, F. Rue, M. Faverge, Y. Ishikawa, R. Namyst, J. Dongarra, <i>IEEE/ACM International Symposium on Cluster, Cloud and Grid computing (CCGrid 2011)</i> . Poster session. |
| 2009 | De l'interaction des communications et de l'ordonnancement de threads au sein des grappes de machines multi-coeurs. F. Trahay, <i>PhD thesis</i> supervised by R. Namyst and A. Denis, defended the 13th of November, University of Bordeaux. |
| 2009 | A scalable and generic task scheduling system for communication libraries. F. Trahay, A. Denis, <i>IEEE International Conference on Cluster Computing</i> . |
| 2009 | NewMadeleine : An Efficient Support for High-Performance Networks in MPICH2. G. Mercier, F. Trahay, D. Buntinas, E. Brunet, <i>IEEE IPDPS Conference</i> . |
| 2009 | An analysis of the impact of multi-threading on communication performance. F. Trahay, E. Brunet, A. Denis, <i>IEEE IPDPS Workshop on Communication Architecture for Clusters</i> . |
| 2009 | Bibliothèque de communication multi-threadée pour architectures multi-coeurs. F. Trahay, <i>Rencontres Francophones du Parallélisme</i> . |
| 2008 | A Multicore-enabled Multirail Communication Engine. E. Brunet, F. Trahay, <i>IEEE International Conference on Cluster Computing</i> . |
| 2008 | A multithreaded communication engine for multicore architectures. F. Trahay, E. Brunet, A. Denis, R. Namyst, <i>IEEE IPDPS Workshop on Communication Architecture for Clusters</i> . |

- 2008 **PIOMan : un gestionnaire d'entrées-sorties générique.** F. Trahay, *Rencontres Francophones du Parallélisme*.
- 2007 **Improving Reactivity and Communication Overlap in MPI using a Generic I/O Manager.** F. Trahay, A. Denis, O. Aumage, R. Namyst, *EuroPVM/MPI Conference*.
- 2006 **Gestion de la réactivité des communications réseau.** F. Trahay, *Master thesis*, University of Bordeaux 1.

Teaching Experience

- Since 2011 **Associate Professor** at Télécom SudParis. *Operating systems, algorithmic and programming, etc..*
- 2009-2010 **Teacher assistant** at the University of Bordeaux. *Operating systems, Object programming, IT security, etc..*
- 2006-2009 **Teacher assistant** at the University of Bordeaux. *Parallel programming, Introduction to programming, Operating systems, etc..*

Software development

- **PIOMan**, generic I/O manager for clusters of multicore nodes.
<http://runtime.bordeaux.inria.fr/pioman/>
- Multithreaded progression engine and fault tolerance protocols in **NewMadeleine**.
<http://runtime.bordeaux.inria.fr/newmadeleine/>
- Multithreaded progression engine in **MPICH2-Nemesis**.
- **EZTrace**, generic tool for performance analysis.
<http://eztrace.gforge.inria.fr/>

Research experience & invited talks

- 2010 **Network resilience for large scale supercomputers**, invited talk at l'INRIA Saclay as part of the ANR-JST FP3C project.
- 2010 **EZTrace : a generic framework for performance analysis**, invited talk at the Riken Advanced Institute for Computational Science.
- 2010 **Network resilience for large scale supercomputers**, visit and invited talk at INRIA Bordeaux as part of the ANR-JST FP3C project.
- 2010 **Interactions entre communications et multi-threading**, invited talk at Télécom SudParis.
- 2009 **Efficient communication in multithreaded systems**, visit and invited talk at the University of Tokyo as part of the PHC Sakura collaboration between INRIA Bordeaux and Ishikawa Lab.
- 2008 **Using PIOMan within MPICH2-Nemesis**, visit and invited talk at Argonne National Laboratory as part of collaboration between the INRIA Bordeaux and the Radix teams.
- 2008 **PIOMan : a generic I/O manager**, visit and invited talk at Argonne National Laboratory as part of collaboration between the INRIA Bordeaux and the Radix teams.
- 2007 **Gestion des communications dans un environnement multi-threadé**, invited talk, LaBRI, University of Bordeaux.