3 - Curriculum Vitae - Anne BENOIT

Assistant Professor
Laboratoire de l'Informatique et du Parallélisme (LIP), Ecole Normale Supérieure (ENS) de Lyon
46 allée d'Italie, 69364 Lyon Cedex 07, France

Phone: +33 (0) 47272 8758, +33 (0) 67621 1008
E-mail: Anne.Benoit@ens-lyon.fr – **Homepage**: http://graal.ens-lyon.fr/~abenoit

Research interests

Parallel and distributed computing, with an emphasis on models, algorithms, complexity analysis, scheduling techniques and high-level parallel programming (algorithmic skeletons). Performance evaluation of parallel systems and applications, models such as petri nets, stochastic automata networks and process algebra, discrete and continuous time, using Markov chains (steady state solution). Aspects of fault tolerance.

Professional experience

July 2009 **Habilitation à diriger les recherches**. Provisional title: "Scheduling pipelined applications: models, algorithms and complexity". Reviewers: Marco Danelutto, Charles Leiserson, Uwe Schwiegelshohn.

Sept 2005-Present **Assistant Professor**, LIP, Ecole Normale Supérieure de Lyon, France. **Graal** project: *Algorithms and Scheduling for Distributed Heterogeneous Platforms*

Sept 2003-Aug 2005 **Research Assistant**, School of Informatics, University of Edinburgh, Scotland. **Enhance** project: *Enhancing the Performance Predictability of Grid Applications with Patterns and Process Algebras*, with Murray Cole, Jane Hillston and Stephen Gilmore.

Education

Oct 2000-Sept 2003 **PhD in Computer science: Systems and Communications** in the Institut National Polytechnique de Grenoble, defended the 18th June 2003, entitled *Methods and Algorithms for the performance evaluation of systems with a large state space.* Supervisor: Brigitte Plateau (ID-IMAG laboratory, Grenoble, France).

1999-2000 **"Diplôme d'Etudes approfondies"** (DEA) of Computer science: Systems and Communication (prerequisite for the Ph.D); passed with "Excellent"; University Joseph Fourier, Grenoble, France. **DEA (master) project**, ID-IMAG laboratory, under the supervision of Jacques Chassin de Kergommeaux: *Study of interactions between the Athapascan-0 tracing tool and the traced applications.*

1997-2000 **École Nationale Supérieure d'Informatique et de Mathématiques Appliquées de Grenoble (ENSIMAG)**, INPG, Grenoble, France. Equivalent to a Master's Degree in Computer Science, Emphasis in Systems and Networks; passed with "Excellent".
Summer 1999: 8 weeks training period at Caltech (California Institute of Technology), Pasadena, USA. Summer 1998: 6 weeks training period at IRAM (Institute for Research in Millimeter Astronomy), Grenoble, France.

1995-1997 **Intensive undergraduate studies** in advanced scientific technologies, mathematics and physics for the competitive entrance exams to the french engineering schools (MPSI-MP*); **Scientific "Baccalauréat"** (French secondary school diploma, equivalent to the "A" levels), passed with "Excellent" in 1995. Emphasis in Mathematics.

Research projects

2008-2010 Co-project investigator of the **StochaGrid** ANR project: design of new stochastic models that will allow for an accurate prediction of the performance of workflow applications on grid computing platforms, and new scheduling algorithms.

2007-2009 Project leader of the **SchedLife** CNRS/USA project: "Symbiotic scheduling of biological grid applications".

2006-2009 Member of the **Alpage** ANR project: "Algorithms for large-scale platforms".

2004-2008 Member of **CoreGRID**, European Network of Excellence.

2002-2003 **DECORE** IMAG-ELESA project: task coordinator "Exploiting the symmetries in communication network models".

Teaching

Sept 2006-Present	Responsible of 3rd year computer science students at ENS (Ecole Normale Supérieure de Lyon, France).
Sept 2005-Present	Teaching Algorithms, Parallel Algorithms, and Algorithms for networks and telecommunications at ENS Lyon, and tutoring students.
2004-2005	Tutoring on an Enterprise Computing course at the University of Edinburgh.
Oct 2000-Sept 2003	Gave computer science lectures at ESISAR (INPG, Valence, France) and at ENSIMAG (INPG, Grenoble, France): algorithms, compilation, performance evaluation.

Students advising

2008-Present	Co-advising Fanny Dufossé's master and PhD thesis with Yves Robert, on the mapping of filtering tasks onto large-scale heterogeneous platforms.
2006-Present	Co-advising Veronika Rehn-Sonigo's PhD thesis with Yves Robert, on the multicriteria scheduling of workflow applications.
2003	Student advisor for a project on translating UML models (system verification) in SANs.
2002	Student advisor for a project on aggregation of symmetrical Stochastic Automata Networks.

Publications

10 international journal papers, 25 international conference papers, 3 national french papers, 21 research reports. Please refer to my Web homepage for the complete list of publications:
`http://graal.ens-lyon.fr/~abenoit/publi.html`

Selected publications:

[1] A. Benoit, B. Plateau and W.J. Stewart. **Memory-efficient Kronecker algorithms with applications to the modelling of parallel systems**. *Future Generation Computer Systems (FGCS)*: Special issue on System Performance Analysis and Evaluation, 22(7):838-847, 2006.

[2] A. Benoit, M. Cole, S. Gilmore and J. Hillston. **Scheduling skeleton-based grid applications using PEPA and NWS**. *The Computer Journal*: Special issue on Grid Performability Modelling and Measurement 48(3):369-378, 2005.

[3] A. Benoit, V. Rehn-Sonigo and Y. Robert. **Replica Placement and Access Policies in Tree Networks.** *IEEE Transactions on Parallel and Distributed Systems.* 19(12):1614-1627, 2008.

[4] A. Benoit and Y. Robert. **Mapping pipeline skeletons onto heterogeneous platforms.** *Journal of Parallel and Distributed Computing.* 68(6):790-808, 2008.

[5] A. Benoit, M. Hakem and Y. Robert. **Contention Awareness and Fault Tolerant Scheduling for Precedence Constrained Tasks in Heterogeneous Systems.** To appear in *Parallel Computing (ParCo)*, Elsevier. Accepted November 2008.

Other professional activities

Conference chairing: Co-organizing the PAPP Workshops (Practical Aspects of High-Level Parallel Programming) in 2006, 2007, 2008, 2009, co-located with ICCS (Int. Conf. on Computational Science).

Conference program committees: PC member for the ICCS conference from 2005 to 2009 (Int. Conf. on Computational Science), IPDPS 2008 (Int. Parallel and Distributed Processing Symp.), SBAC-PAD 2008 (Int. Symp. on Computer Architecture and High Performance Computing), HPCC 2009 (Int. Conf. on High Performance Computing and Communications), ISPDC 2009 (Int. Symp. on Parallel and Distributed Computing).

Reviewing: Reviewer of several international journals, conferences and workshops, such as IEEE TSE, PPL, JPDC, IJHPCA, Parco, IPDPS, HCW, ICCS, PAPP, EuroPar, ICPADS, SBAC-PAD, PNPM, NSMC, CMPP, CC, Markov Anniversary Proceedings, ...

Awards

2007-2011	**Prime d'encadrement doctoral et de recherche.**
Feb 2005	**Outstanding thesis award** by the Institut National Polytechnique de Grenoble for my PhD thesis.