

Aurélien Rizk
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Born on April 7th , 1984
French citizenship

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Education

2007–current	PhD student <i>Temporal logic constraint solving for the analysis of biological systems</i> <i>Under supervision of François Fages, anticipated completion 12/2010</i> INRIA Paris-Rocquencourt
2006–2007	Master 2 in Bioinformatics and Biostatistics <i>With best honors, Rank 1st</i> Université Paris-Sud XI, Orsay
2005–2006	Master 1 in Computer Science <i>With honors, Rank 3rd</i> Université of Rennes I, France 2nd year of Magistère Informatique et Télécommunications <i>Predoctoral diploma in Computer Science</i> <i>École Normale Supérieure de Cachan, brittany extension</i>
2004–2005	Bachelor Degree in Computer Science <i>With honors, Rank 5th</i> Université of Rennes I 1st year of Magistère Informatique et Télécommunications <i>École Normale Supérieure de Cachan, brittany extension</i>
2001–2004	Preparatory Classes <i>A 2 or 3 years extensive study course in mathematics and physics to prepare for the selective exams to the French Grandes Ecoles</i> <i>Admitted to the École Normale Supérieure de Cachan</i> Lycée Saint Louis, Lycée Fénélon, Paris
2001	Baccalauréat Scientifique Le Havre

Research Experience

2007–2010	PhD student (INRIA Paris-Rocquencourt, France) <i>Temporal logic constraint solving for the analysis of biological systems</i> <i>Under supervision of François Fages</i> INRIA Paris-Rocquencourt
Summer 2006 3 months	Lab training period (Brandeis University, Waltham/Boston, MA) <i>Reverse engineering algorithms for inferring genetic networks: A novel approach using discrete Jacobians</i> <i>Under supervision of Prof. Jacques Cohen</i>
Summer 2005 9 weeks	Lab training period (IMAG Grenoble, France) <i>In PLIAGE Project. Application of Constraint Logic Programming to biological regulatory networks : revisiting the establishment of the Dorsal-ventral pattern during embryonic development of Drosophila melanogaster.</i> <i>Under supervision of Prof. Laurent Trilling</i>

Teaching experience

2010 **Teaching assistant in computer science at Université Versailles Saint Quentin**
Introduction to programming for undergraduate students (36h)

Skills

Computer science: model checking, graph theory, algorithms, programming, operating systems, architecture, software engineering, information theory, computability, high performance computing.

Bioinformatics: systems biology (modelling, parameter optimization, robustness and sensitivity analysis), genetic regulatory network inference, synthetic biology (I am a member of the Paris team which participated in the iGEM 2007 synthetic biology competition and was awarded the first prize on foundational research), algorithms for structural prediction of biological molecules, genomics.

Programming languages: C, C++, Java, Ocaml, Prolog, Lisp, MPI

Languages: English: fluent (Toeic 955/990); French: mother tongue; German : notions.

Publications

Journal articles

- Continuous valuations of temporal logic specifications with applications to parameter optimization and robustness measures, **Aurélien Rizk**, Grégory Batt, François Fages and Sylvain Soliman, Theoretical Computer Science. 2010.
- A general computational method for robustness analysis with applications to synthetic gene networks, **Aurélien Rizk**, Grégory Batt, François Fages and Sylvain Soliman, Bioinformatics, ISMB09/ECCB09 Special Issue.
- On Temporal Logic Constraint Solving for the Analysis of Numerical Data Time series. François Fages and **Aurélien Rizk**. Theoretical Computer Science. 2008.

Submitted:

- Design, Optimization and Predictions of a Coupled Model of the Cell Cycle, Circadian Clock, DNA Irinotecan Metabolism and Exposure Control under Temporal Logic Constraints. Elisabetta De Maria, François Fages, **Aurélien Rizk** and Sylvain Soliman. Submitted to Theoretical Computer Science.

International peer-reviewed conferences

- From Model-Checking to Temporal Logic Constraint Solving. François Fages and **Aurélien Rizk**. Proc of 15th international Conference on Principles and Practice of Constraint Programming, CP'09. LNCS, Springer-Verlag. 2009

- On a Continuous Degree of Satisfaction of Temporal Logic Formulae with Applications to Systems Biology. **Aurélien Rizk**, Grégory Batt, François Fages and Sylvain Soliman. Computational Methods in Systems Biology CMSB'08. Springer-Verlag. May 2008.
- On the Analysis of Numerical Data Time Series in Temporal Logic. François Fages and **Aurélien Rizk**. Computational Methods in Systems Biology, CMSB'07 Edinburgh. Springer-Verlag LNBI, 2007

Workshops

- Analyse de Séries Temporelles par Résolution de Contraintes de Logique Temporelle. François Fages and **Aurélien Rizk**. Actes des troisièmes Journées Francophones de Programmation par Contraintes, JFPC 08.
- Analyzing Biological Data Time Series in Constraint-LTL, Francois Fages, **Aurélien Rizk**, Workshop on Constraint-Based Methods for Bioinformatics 2007

References

François Fages - francois.fages@inria.fr
 Senior Research Scientist at INRIA Paris-Rocquencourt, head of the Contraintes group.
 PhD supervisor (2007-2010)

Alain Denise - alain.denise@lri.fr
 Professor in the bioinformatics group at Université Paris-Sud 11.
 Supervisor at the Master of Bioinformatics and Biostatistics (2006-2007)

Jacques Cohen - jc@cs.brandeis.edu
 Professor of Computer Science at Brandeis University.
 Internship supervisor (2006)