

LaBRI

Laboratoire Bordelais de
Recherche en Informatique

Computer Science
Research Laboratory

Bordeaux

www.labri.fr

General information

- Created in 1986
- « Mixed Research Unit » (CNRS, Bordeaux 1 University, ENSEIRB)
- People
 - ◆ More than 90 researchers
 - ◆ About 60 PhD students and 6 post-docs
 - ◆ About 35 to 45 Master students
 - ◆ About 8 administrative and technical staff

Research groups

- Combinatorics and algorithms
- Logic, automata, algorithms and applications
- Modelisation, verification and testing
- Parallel and distributed computing
- Image and sound

...and some transversal projects...

Combinatorics and algorithms

- 31 researchers, 11 PhD or post-docs
- Research topics
 - ◆ Enumerative combinatorics, maps, physics
 - ◆ Random generation and visualisation
 - ◆ Graphs and applications
 - ◆ Distributed algorithms

Enumerative combinatorics, maps and physics

- Enumerative problems arising from other fields (statistical physics, algebraic number theory, algorithm analysis, ...)
- Bijective methods, formal series
- Pattern recognition, distances (bio-informatics)

**Mireille BOUSQUET-MELOU - Robert CORI -
Maylis DELEST - Serge DULUCQ -
Jean-Guy PENAUD - Xavier VIENNOT -
Sacha ZVONKINE**

Random generation and visualisation

- Generation of combinatorial objects (words, trees, graphs, ...) according to given laws of probability
- Visual inspection of (very large) graphs

**Maylis DELEST - Jean-Guy PENAUD -
Nasser SAHEB - Xavier VIENNOT**

Distributed algorithms

- Model for distributed algorithms based on graph rewriting
- Commutation monoids
- Probabilistic algorithms

**Michel BAUDERON - Yves METIVIER -
Mohammed MOSBAH - Nasser SAHEB**

Logic, automata, algorithms and applications

- 16 researchers, 11 PhD or post-docs
- Research topics
 - ◆ Graphs and logic
 - ◆ Automata and formal languages
 - ◆ Automata and mathematics

**Bruno COURCELLE – Géraud SENIZERGUES –
Michel BAUDERON – Pascal WEIL**

Graphs and logic

- Expressive power of different logics
- Monadic second-order logic of graphs
- Structural properties of graphs (tree-width, clique-width, ...)
- Design of efficient algorithms

Bruno COURCELLE

Automata and mathematics

- Mathematical aspects of automata theory and applications of automata-theoretic methods to mathematics
 - ◆ Theory of semi-groups and monoids
 - ◆ Combinatorial theory of free groups
 - ◆ Classification of equational surfaces

Pascal WEIL

Modelisation, verification and testing

- 12 researchers, 8 PhD or post-docs
- Research topics
 - ◆ Modelisation and verification
 - ◆ Temporal logic and μ -calculus
 - ◆ Generation of test sequences
 - ◆ Automatic proving

André ARNOLD – Richard CASTANET

Parallel and distributed computing

- 14 researchers, 7 PhD or post-docs
- Research topics
 - ◆ Parallel algorithms and programming environments
 - ◆ High Performance Computing
 - ◆ Distributed systems and objects
 - ◆ Adaptative software

**Serge CHAUMETTE - Charles CONSEL -
Raymond NAMYST - Jean ROMAN**

Image and sound

- 17 researchers, 17 PhD or post-docs
- Research topics
 - ◆ Structuring and image analysis
 - ◆ Modeling and image synthesis
 - ◆ Music computing

**Achille BRAQUELAIRE -
Myriam DESAINTE-CATHERINE -
Pascal GUITTON - Christophe SCHLICK**

Thank you for
your attention...