GrAMA Group

Contact: Pr. Hamamache Kheddouci – Tel.: +33 472 448 369 – Fax : +33 472 431 536
e-mail: hamamache.kheddouci@liris.cnrs.fr Web site: http://liris.cnrs.fr/grama/

Members

- 3 Professors
- 8 Assistant-Professors
- 11 PhD Students

Keywords

- Algorithms, Graphs, Multi-Agents Systems, Distributed Large-Scale Systems

Skills

- Graph Algorithms, Distributed and/or Self-Stabilizing Algorithms, Graph Theory, Multi-Agent System (MAS), Intelligent Decentralized Systems, Algorithms and Self-* Systems

Expertise

- Modelling Large-Scale Systems and Complex Systems Data
- Analysis of very Large Graphs
- Optimization, Robustness and Fault Tolerance
- Intelligent Control of Decentralized and Open Systems

Defended Thesis

- 3 per year, in average

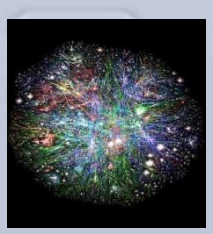
Publications

- An average of 5 International Journals and 15 International selective conferences per year.

The GrAMA group develops research activity in two domains: Graphs and Multi-Agent Systems. Besides research contribution in these specific research areas, the group research addresses issues raised by algorithms scalability to large amount of data, the development of self-* features, distributed and dynamic reasoning, emergence of structures and behaviours and their effective exploitation in the proposed models.

Our application domains are: the future web and internet templates of communication, large data systems and digital societies

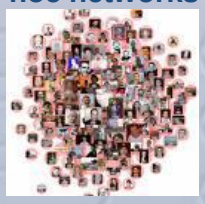
Complex Networks



Internet

Ad hoc networks

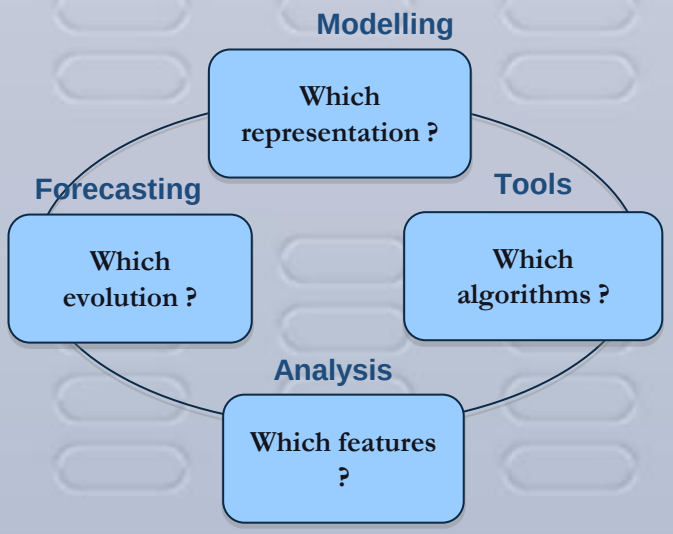
Social networks



Smart Digital Societies

- **Large amount of data**
- **Large-scale sytems**
- **Data complexity**
- **Exchange complexity**
- **Dynamic feature**
- **Systems:**
  - **open**
  - **distributed**
  - **decentralized**

Graphs Models | **Multi-agents Systems**



Laboratoire d'InfoRmatique en Image et Systèmes d'Information
UMR5205 CNRS/INSA de Lyon/Université Claude Bernard Lyon 1/Université Lumière Lyon 2/Ecole Centrale de Lyon

Research Objectives

- Models and Algorithms for Distributed Large-Scale Systems (data mining, social networks, internet, etc.)
- Intelligent and Distributed Solutions for Complex Problems in Open, Dynamic and Uncertain Environments
- Models and Algorithms for Dynamic and Intelligent Decentralized Control in Large-Scale Systems with Self-* Features (Self-adaptation, Self-organization, etc.)

Achievements

- Patent for a generic multi-criteria negotiation process in a dynamic environment
- Platform for matching large graphs of data
- Involvement in the foundation of a self-* systems community and its associated conference SASO

Activities

- **International**
  - Editorial board of International Journals, Steering Committee and Program Committee of International Conferences
  - Chairing and Organization of International Conferences (ex.: IEEE SASO 2012) and workshops
  - Visiting researchers, Invited lectures, research evaluation committees of several foreign Universities
  - International evaluation committees (Europe, Deutschland, Netherlands, Canada, Norway, etc.)
  - International Projects Partnership (Europe, Bilateral-Partnership, …)
- **National**
  - Active participation in national Research Working Groups: GDR IM, ASR, GT AFIA, GDR I3
  - Organization of National and French-Speaking Conferences and Workshops
  - National Evaluation (AERES, ANR projects, Rhône-Alpes Region Projects, etc.)
  - Animation of Research Networks (RNSC, ..)
  - National Projects Partnership (ANR AOC, PEPS CNRS, PREDIT ALF, …)
- **Regional**
  - Collaboration with IFFSTAR, COOPERA Project, ARC 6, ARC 7, IXXI, IMU (Excellence Lab.), and Industrial Poles of Competitiveness (LUTB)

International collaborations

- Algeria, Australia, Austria, Canada, Greece, Ireland, UK, Romania, Spain, Switzerland, USA, Vietnam.