École de sciences avancées de Luchon
School of advanced sciences of Luchon
Network analysis and applications
Session I, June 21 - July 5, 2014

School Organizers:

A. Benczúr (Budapest), A. Kaltenbrunner (Barcelona), D. Shepelyansky (Toulouse)

Scope: In past ten years, modern societies developed enormous communication and social networks. New characterization tools of complex networks provide possibilities for information retrieval in social networks, communication, economy, gene, protein and other networks. The interdisciplinary approaches based on complex networks and Markov chains allow to obtain advanced results in such diverse fields as physics, computer science and bioinformatics. The school will present lectures of world leading experts in these fields. Topics: Scale-free networks; Markov chains and ranking algorithms; Data mining methods; Google matrix analysis; Information retrieval and search engines; Temporal Web analysis; Big data analysis for Web, Wikipedia, genomics and proteomics; Reconstruction of biological networks from gene expression data; Networks in economics.

List of confirmed lecturers and main topics::

- Alain Barrat (CNRS Marseille) - *Epidemics and networks*
- András Benczúr (MTA_SZTAKI Budapest) - *Recommendation systems*
- Paolo Boldi (U Milano) - *Algorithms for search engines*
- Sergey Dorogovtsev (U Averio) - *Giant components in complex networks and epidemics*
- Klaus Frahm (U Toulouse) - *Spectral properties of Google matrix*
- Aristides Gionis (U Aalto) - *Dense-subgraph discovery*
- Andreas Kaltenbrunner (Barcelona Media) - *Network analysis and visualization for social media*
- Victor Solovyev (KAUST) - *Genomics and transcriptomics big data analysis*

Special topics:

- Young-Ho Eom (CNRS Toulouse) - *Network rankings of people via multilingual Wikipedia editions*
- Bertrand Georgeot (CNRS Toulouse) - *Game of GO as a complex network*
- Katia Jaffres-Runser (ENSEEIHT Toulouse) - *Network analysis for context on wireless networking*
- Bertrand Jouve (CNRS - U Toulouse 2) - *Graphs to analyze medieval social networks*
- Nelly Litvak (U Twente) - *Quick detection of popular entities in large on-line networks*
- Esteban Moro (U Carlos III de Madrid) - *To be announced*
- Dima Shepelyansky (CNRS Toulouse) - *Google matrix analysis of world trade network*
- Marc Spaniol (MPI Saarbrucken) - *Entity-level temporal Web analytics*
- Nathalie Villa-Vialaneix (INRA Toulouse) - *Mining co-expression network*
- Taha Yasseri (Oxford Internet Inst) - *Conflict and editorial wars in Wikipedia, a network approach*
- and others - *To be announced*

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Information at Web page: http://www.quantware.ups-tlse.fr/ecoleluchon2014/