

# CV - Lionel Tabourier (January 2023)

## Contact Information :

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**Current situation (since 2014) : Associate Professor in Computer Science**  
*Complex Networks* team, LIP6, Sorbonne Université (previously UPMC) / CNRS

## Career :

**since 2018** *Complex Networks team leader* (LIP6).  
**2017-2014** **Visiting researcher** at ISC-PIF (CNRS, Paris).  
**since 2014** **Associate Professor** in Computer Science at Université Pierre et Marie Curie (UPMC).  
**2012-2014** **Post-Doc** in Applied Mathematics at naXys (University of Namur, Belgium).  
**2011-2012** **Post-Doc** in Computer Science at LIP6 (UPMC).  
**2010-2011** **Teaching Assistant** (ATER) in Computer Science at LIP6 (UPMC).  
**2009-2010** **Engineer** at the CRÉA (École Polytechnique) for *Webfluence* research project.  
**2006-2010** **PhD candidate** at SPEC (CEA Saclay) :  
**2006-2009** **Trainee Teaching Assistant** in Physics at UPMC.

**2006** Research internship at the LIAFA (CS laboratory of Paris 7 University) :  
(April to July) “Analysis of social networks periphery” (supervisor : Christophe Prieur)  
**2004** Research internship at the LPS (Statistical Physics Laboratory of the ENS Paris) :  
(May to July) “Road traffic modeling” (supervisor : Cécile Appert-Rolland)  
**2003** Research internship at the Seismology Laboratory of the IPGP :  
(June to July) “Crack speed in earthquakes” (supervisor : Pascal Favreau).

## Education and diplomas :

**2018** Habilitation à Diriger les Recherches - qualification to supervise PhD students.  
“From a static to a dynamic analysis of complex networks.”  
reviewers : Marco Fiore, Petter Holme, Christine Largeron  
examiners : Étienne Birmelé, Vittoria Colizza, Clémence Magnien, Céline Robardet

**2010** PhD Defense, Université Pierre et Marie Curie (UPMC, now Sorbonne Université).  
“Comparison method of complex graphs topologies applied to social networks analysis”.  
reviewers : Éric Fleury, Pablo Jensen  
examiners : Paul Bourguine, Matthieu Latapy, Camille Roth  
supervisors : Hugues Chaté, Annick Lesne

**2006-2009** Master’s degree in history and philosophy of science at Paris 7 University.  
**2005-2006** Master’s degree in statistical physics at the ENS Lyon.  
**2005** Passed the *Agrégation de physique*.  
**2004-2005** Training for the *Agrégation de physique* - national physics teaching qualification.  
**2002-2004** Bachelor’s Degree in general physics at the ENS Lyon.  
**2002** Admitted to the École Normale Supérieure de Lyon (ENS Lyon).  
**1999-2002** Preparatory school in physics - for the competition for the *Grandes Écoles*.

## Publications :

- **International Journals :**

- \* *[Re] Speedup Graph Processing by Graph Ordering.*

F. Lécuyer, M. Danisch, **L. Tabourier**.

*ReScience C*, 2021.

- \* *Measuring Diversity in Heterogeneous Information Networks.*

P. Ramaciotti Morales , R. Lamarche-Perrin, R. Fournier-S’Niehotta, R. Poulain, **L. Tabourier**, F. Tarissan.

*Theoretical Computer Science*, 2021.

- \* *RankMerging : A supervised learning-to-rank framework to predict links in large social networks.*

**L. Tabourier**, D. Bernardes, A.S. Libert, R. Lambiotte.

*Machine Learning Journal*, 2019.

- \* *Spreading dynamics in a cattle trade network : Size, speed, typical profile and consequences on epidemic control strategies.*

A. Payen, **L. Tabourier**, M. Latapy.

*PLoS ONE*, 2019.

- \* *Predicting interactions between individuals with structural and dynamical information.*

T. Arnoux, **L. Tabourier**, M. Latapy.

*Journal of Interdisciplinary Methodologies and Issues in Sciences*, 2019.

- \* *Characterizing and predicting mobile application usage.*

K.W. Lim, S. Secci, **L. Tabourier**, B. Tebbani.

*Computer Communications*, 2016.

- \* *Predicting links in ego-networks using temporal information.*

**L. Tabourier**, A.S. Libert, R. Lambiotte.

*EPJ Data Science*, 2016.

- \* *Burstiness and spreading on temporal networks.*

R. Lambiotte, **L. Tabourier**, J.C. Delvenne.

*European Physical Journal B*, 2013.

- \* *Internal links and pairs as a new tool for the analysis of bipartite complex networks.*

O. Allali, **L. Tabourier**, C. Magnien, M. Latapy.

*Social Network Analysis and Mining*, 2013.

- \* *Firm-network characteristics and economic robustness to natural disasters.*

F. Henriot, S. Hallegatte, **L. Tabourier**.

*Journal of Economic Dynamics and Control*, 2012.

- \* *Intrinsically dynamic communities from evolving, directed network data.*

B. Mitra, **L. Tabourier**, C. Roth.

*Computer Networks*, 2012.

- \* *Generating constrained random graphs using multiple edge switches.*

**L. Tabourier**, C. Roth, J.P. Cointet.

*Journal of Experimental Algorithmics*, 2011.

- \* *Directedness of information flow in mobile phone communication networks.*

F. Peruani, **L. Tabourier**.

*PLoS ONE*, 2011.

- \* *Citations among blogs in a hierarchy of communities : method and case study.*

A. Salah Brahim, B. Le Grand, **L. Tabourier**, M. Latapy.

*Journal of Computational Sciences*, 2011.

- **International Conferences and Workshops :**
  - \* **Tailored vertex ordering for faster triangle listing in large graphs.**  
F. Lécuyer, L. Jachiet, C. Magnien, **L. Tabourier**.  
Proceedings of *ALENEX 2023*.
  - \* **Testing the Impact of Semantics and Structure on Recommendation Accuracy and Diversity.**  
P. Ramaciotti Morales, **L. Tabourier**, R. Fournier-S'niehotta.  
Proceedings of *ASONAM 2020*.
  - \* **A random model that relies on maximal bicliques to preserve the overlaps in bipartite networks.**  
F. Tarissan, **L. Tabourier**.  
Proceedings of *CNA 2019*.
  - \* **Role of the website structure in the diversity of browsing behaviors.**  
P. Ramaciotti Morales, **L. Tabourier**, S. Ung, C. Prieur.  
Proceedings of *Hypertext 2019*.
  - \* **Ego-betweenness centrality in link streams.**  
M. Ghanem, F. Coriat, **L. Tabourier**.  
Proceedings of *SNA (workshop ASONAM 2017)*.
  - \* **Combining structural and dynamic information to predict activity in link streams.**  
T. Arnoux, **L. Tabourier**, M. Latapy.  
Proceedings of *ASONAM 2017*.
  - \* **Impact of temporal features of cattle exchanges on the size and speed of epidemic outbreaks.**  
A. Payen, **L. Tabourier**, M. Latapy.  
Proceedings of *ICCSA 2017*, Agricultural and Environmental Big Data Analytics session.
  - \* **RankMerging : Learning to rank in large-scale social networks.**  
**L. Tabourier**, A.S. Libert, R. Lambiotte.  
Proceedings of *DyNak II (workshop PKDD 2014)*.
  - \* **A data-driven analysis to question epidemic models for citation cascades on the blogosphere.**  
A. Salah Brahim, **L. Tabourier**, B. Le Grand.  
Proceedings of *ICWSM 2013*.
  - \* **How to detect causality effects on large dynamical communication networks.**  
**L. Tabourier**, A. Stoica, F. Peruani.  
Proceedings of *Comsnets 2012*.
- **Books Chapters :**
  - \* **Interaction Prediction Problems in Link Streams.**  
T. Arnoux, **L. Tabourier**, M. Latapy.  
*in Dynamics on and of complex networks III*, 2019.
- **French speaking Journals :**
  - \* **Génération de graphes aléatoires par échanges multiples d'arêtes.**  
**L. Tabourier**, J.P. Cointet, C. Roth.  
*Journal de la Société Française de Statistique*, 2017.
- **French speaking Conferences and Workshops :**
  - \* **Énumération efficace des cliques maximales dans les flots de liens réels massifs**  
A. Baudin, C. Magnien, **L. Tabourier**.  
Proceedings of *EGC 2023*.
  - \* **RankMerging : Apprentissage supervisé de classements pour la prédiction de liens dans les grands réseaux sociaux.**  
**L. Tabourier**, A.S. Libert, R. Lambiotte.  
Proceedings of *EGC 2015*.
  - \* **Cycles in hypergraph-based networks : signal or noise, artefacts or processes ?**  
**L. Tabourier**, J.P. Cointet, C. Roth.  
Proceedings of *Algotel 2008*.

## Projects and fundings

- **Limass** (2019-2021) National Research Agency project : member then coordinator  
*Linear Algorithms for Massive Real-World Graphs* (initial coordinator : M. Danisch)
- **Algodiv** (2016-2019) National Research Agency project : LIP6 principal investigator  
*Information Diversity and Algorithmic Recommendation*

## Research supervision

### • Phd students :

- \* Nouamane Arhachoui (2023-...), co-supervision : Vincent Gauthier (Télécom Sud Paris).  
*Mitigation strategies against fake news diffusion in online social platforms*
- \* Duncan Cassells (2022-...), co-supervision : Pedro Ramaciotti Morales (Sciences-Po MediaLab).  
*Polarization in large socio-informational networks : models and measures*
- \* Alexis Baudin (2021-...), co-supervision : Clémence Magnien (LIP6).  
*Enumeration problems in massive graphs and applications*
- \* Fabrice Lécuyer (2020-...), co-supervision : Maximilien Danisch then Clémence Magnien (LIP6).  
*Sorting nodes to scale to massive real-world networks*
- \* Aurore Payen (2015-2018), co-supervision : Matthieu Latapy (LIP6).  
*Importance of temporality in propagation phenomena, illustration on cattle trade networks*
- \* Thibaud Arnoux (2015-2018), co-supervision : Matthieu Latapy (LIP6).  
*Predicting interactions in link streams*

### • Graduate students :

- \* Ruben Patriarca (May-August 2022) with Mehdi Naima (LIP6).
- \* Nouamane Arhachoui (February-August 2022) with Anastasios Giovanidis (LIP6).
- \* Cécile Pov (April-October 2020) with Fabien Tarissan (ENS Paris-Saclay).
- \* Alexandre Wilmet (April-August 2019) with Pedro Ramaciotti Morales (LIP6).
- \* Cyril Malbranke (April-August 2018) with Jean Creusefond (Delight).
- \* Sylvain Ung (February-August 2018) with Pedro Ramaciotti Morales (LIP6).
- \* Yekta Kesenci (May-August 2017) with Christophe Prieur (Télécom Paris-Tech).
- \* Berrenur Saylam (February-June 2016) with Raphaël Fournier-S'niehotta (CNAM).
- \* Illya Gorodenskyy (March-August 2015) with Anne Fladenmuller (LIP6).
- \* Clément Gastaud (May-July 2015).

### • Undergraduate students :

- \* Grégoire Uhlrich-Meunier (June-July 2016).
- \* Maxime Savaro (June-July 2012).

## Program production

- Software available at <http://lioneltabourier.fr/program.html>
  - \* Source codes and user guide for *K-edge switching*, random graph generator.
  - \* Source codes and user guide for *RankMerging*, supervised learning method for link prediction.

## Other scientific production

### • Philosophy of science :

Article in French about the analogy between deterministic cellular automata and physical systems published in *Lato Sensu, revue de la Société de philosophie des sciences*, 2018.

### • Popular science :

Article in French about the modelling the epidemic risk using network science published in *Le Prisme à Idées*, 2012.

## Visits and presentations

- **Scientific Visits :**

- \* *Institut des Systèmes Complexes*, CNRS, France, from September 2017 to August 2018.
- \* *Takemura-Masuda Laboratory*, University of Tokyo, Japan, June 2013.
- \* *Max Planck Institute for the Physics of Complex Systems*, Germany, July 2011.

- **Conference presentations :**

- \* *NetSci, Workshop on Livestock Movement Networks & Infectious Disease*, Paris, June 2018.
- \* *11th Workshop on Complex Evolving System Approach in Economics*, Nice, October 2017.
- \* *EGC 2015*, Luxemburg, January 2015.
- \* *DyNakII (ECML-PKDD 2014 satellite)*, Nancy (France), September 2014.
- \* *TNETS'13 (ECCS 2013 satellite)*, Barcelona (Spain), October 2013.
- \* *AAAI ICWSM 2013*, Cambridge (United States), July 2013.
- \* *Journées Automnales ResCom*, Paris (France), November 2012.
- \* *IEEE COMSNETS 2012*, Bangaluru (India), January 2012.
- \* *NetMob 2011*, Cambridge (United States), October 2011.
- \* *DOOCN V (ECCS 2011 satellite)*, Vienna (Austria), September 2011.
- \* *DOOCN III (ECCS 2009 satellite)*, Warwick (England), September 2009.
- \* *Algotel'08*, Saint-Malo (France), May 2008.

- **Invited talks and seminars :**

- \* *French Regional Conference in Complex Systems*, ISC-PIF (Paris), June 2022.
- \* *Takemura-Masuda Laboratory*, University of Tokyo (Japan), June 2013.
- \* *naXys*, University of Namur (Belgium), October 2012.
- \* *SAMM*, University Paris 1 Panthéon-Sorbonne (France), April 2012.
- \* *ICTEAM*, Catholic University of Louvain (Belgium), March 2012.
- \* *Centre de Physique Théorique*, University of Aix-Marseille (France), November 2011.
- \* *Max Planck Institute for the Physics of Complex Systems*, Dresden (Germany), July 2011.
- \* *LIP6*, University Pierre and Marie Curie, June 2010.

## Reviewing activities

- **PhD jurys :**

- \* Justin Loye (Université Toulouse 3, dir. K. Jaffrès-Runser and S. Mouysset, 2022), reviewer.
- \* Louis Duvivier (INSA Lyon, dir. C. Robardet and R. Cazabet, 2021), reviewer.
- \* Alexandre Darbon (Sorbonne Université, dir. V. Colizza, 2019), examiner.
- \* Mouna Rifi (Université Paris 13, dir. Y. Bennani and R. Kanawati, 2019), reviewer.
- \* Jérémy Guillon (Sorbonne Université, dir. F. de Vico Fallani, 2018), examiner.

- **Reviews and expertise :**

- \* **International Journals :**  
ANS, Computer Communications, Computer Networks, CSON, J. Complex Networks, J.R.Soc.Interface, JSAC, KAIS, Physica A, PLoS ONE, TCS, TKDD, TPDS.
- \* **International Conferences :**  
ICWSM (2021, 2020, 2019), WWW (2015, 2014, 2012) , NetSciCom (2011).
- \* **Expert** for the National Research Agency (ANR) founding program (2013).

- **PC member :**

- \* TheWebConf (2022), WebSci (2021, 2020), WWW satellites (2018), SNAA (2018), COM-SNETS (2017, 2016).

## Event Organization

- **Conference Organization :**
  - \* EUSN 2016 : co-organizer of the workshop on Large Networks.
  - \* publication chair of TMA 2019, publicity Chair of MobiArch 2015.
- **Seminar Organization :**
  - \* Codes Sources (Philosophy of science, 2015-2022) : <http://codesource.hypotheses.org/>
  - \* Complex Networks team (2011-2012) : <http://www.complexnetworks.fr/events/>

## Teaching activities

- **Teaching responsibilities**
  - \* Network Analysis and Mining :  
since 2020, Master 2 Computer Science, Networking specialty.
  - \* Network Structure and Dynamics :  
2015-2019, Master 2 Computer Science, Networking specialty.
- **Administrative responsibilities**
  - \* 2023 : Undergraduate students joint curriculum Computer Science and Physics at SU.
- **Summary table of teaching activities**

Subject	Where	When
<b>Computer Science and Mathematics for Graduate</b>		
Network Analysis and Mining	Sorbonne University	2020-2023
Network Data Analysis	Sorbonne Université	2020-2022
Advanced Algorithmics	Sorbonne Université	2019-2020
Network Structure and Dynamics	Sorbonne Université	2014-2019
Synchronization in Complex Networks	University of Namur	2012
Large Interaction Networks	Université Paris 7	2012
Complex Networks	Ho-Chi-Minh City University	2011
Complex Networks	Sorbonne Université	2010
<b>Computer Science and Mathematics for Undergraduate</b>		
Algorithmic Projects Tutoring	Sorbonne Université	2019-2023
Introduction to Data Science	Sorbonne Université	2021-2022
Basic Programming in Python	Sorbonne Université	2014-2021
Algorithmics	Sorbonne Université	2018-2020
Programming Environment	Sorbonne Université	2016-2019
Introduction to Complex Networks	Babes-Bolyai University	2017
Basic Programming in C	Sorbonne Université	2017
Basic Algorithmics	Sorbonne Université	2015-2018
Introduction to Databases	Sorbonne Université	2015
Academic Internship Tutoring	Sorbonne Université	2011,2014
Graph Theory	University of Namur	2012-2013
Programming in C	Sorbonne Université	2011
Basic Programming in Scheme	Sorbonne Université	2010
<b>Miscellaneous for Undergraduate</b>		
Fluid Mechanics	Sorbonne Université	2019-2020
Career Guidance	Sorbonne Université	2014-2016
Thermodynamics	Sorbonne Université	2008
Optics	Sorbonne Université	2008
Physics for Medical Students	Sorbonne Université	2007
Mechanics	Sorbonne Université	2006