

# CV - Lionel Tabourier (October 2024)

## Contact Information:

LIP6, Sorbonne Université  
4 Place Jussieu, 75005 Paris  
lionel.tabourier@lip6.fr

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

## Career:

**2018-2024** *Complex Networks* team leader (LIP6).  
**2017-2018** **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 LIAFA (CS laboratory, Paris 7 University):  
(April to July) “Analysis of social networks periphery” (supervisor: Christophe Prieur)  
**2004** Research internship at LPS (Statistical Physics Laboratory, 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 Bourguin, 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:**

- \* *Faster maximal clique enumeration in large real-world link streams.*

A. Baudin, C. Magnien, **L. Tabourier**.

*Journal of Graph Algorithms and Applications*, 2024.

- \* *Probabilistic k-swap method for uniform graph generation beyond the configuration model.*

**L. Tabourier**, J. Karadayi.

*Journal of Complex Networks*, 2024.

- \* *[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:**

\* *Modeling both pairwise interactions and group effects in polarization on interaction networks.*

D. Cassells, **L. Tabourier**, P. Ramaciotti Morales.

Proceedings of *CompleNet 2024*.

\* *LSCPM: Communities in Massive Real-World Link Streams by Clique Percolation Method.*

A. Baudin, **L. Tabourier**, C. Magnien.

Proceedings of *TIME 2023*.

\* *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:**

\* *Scalable Algorithms to Measure User Influence in Social Networks.*

N. Arhachoui, E. Bautista, M. Danisch, A. Giovanidis, **L. Tabourier**.

To be published in *Lecture Notes in Social Networks*.

\* *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*
- **TRES** (2017) Regional project: coordinator  
*Time in Live Entertainment Recommendation*

## Research supervision

- **Phd students:**

- \* Nouamane Arhachoui (since 2023), co-supervision: Vincent Gauthier (Télécom Sud Paris).

- Mitigation strategies against fake news diffusion in online social platforms*

- \* Duncan Cassells (since 2022), co-supervision: Pedro Ramaciotti Morales (ISC-PIF, CNRS).

- Polarization in large socio-informational networks: models and measures*

- \* Alexis Baudin (2021-2023), co-supervision: Clémence Magnien (LIP6).

- Enumeration problems in massive graphs and applications*

- \* Fabrice Lécuyer (2020-2023), 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:**

- \* William Gravil (May-September 2024) with Kévin Vermeulen (LAAS, CNRS).

- \* Altynay Shubekova (April-September 2023) with Élodie Laine (LCQB, SU/CNRS).

- \* 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 Gorodensky (March-August 2015) with Anne Fladenmuller (LIP6).
- \* Clément Gastaud (May-July 2015).

- **Undergraduate students:**

- \* Bryan Anthony Queen (June-August 2024) with Yannick Miras (HNHP, MNHN/UPVD/CNRS).
- \* Grégoire Uhrich-Meunier (June-July 2016).
- \* Maxime Savaro (June-July 2012) with Matthieu Latapy (LIP6).

## Program production

- See <https://lioneltabourier.github.io>
  - \* 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:**

- \* Alexis Bénichou (Institut Pasteur, sup. J.B. Masson and C. Vestergaard, 2024), examiner.
- \* Justin Loye (Université Toulouse 3, sup. K. Jaffrès-Runser and S. Mouysset, 2022), reviewer.
- \* Louis Duvivier (INSA Lyon, sup. C. Robardet and R. Cazabet, 2021), reviewer.
- \* Alexandre Darbon (Sorbonne Université, sup. V. Colizza, 2019), examiner.
- \* Mouna Rifi (Université Paris 13, sup. Y. Bennani and R. Kanawati, 2019), reviewer.
- \* Jérémy Guillon (Sorbonne Université, sup. 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:**

- \* ICWSM (2024, 2022), TheWebConf (2022), WebSci (2021, 2020), WWW satellites (2018), SNAA (2018), COMSNETS (2017, 2016).

## Events 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 2019, Master 2 Computer Science, Computer Networks specialty.
- \* Network Structure and Dynamics:  
2015-2019, Master 2 Computer Science, Computer Networks specialty.

- **Administrative responsibilities**

- \* since 2023: Undergraduate 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	2019-2024
Advanced Development Projects Tutoring	Sorbonne Université	2019-2024
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>		
Development Projects Tutoring	Sorbonne Université	2019-2024
Introduction to Data Science	Sorbonne Université	2021-2024
Basic Programming in Python	Sorbonne Université	2014-2024
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