Noé Gaumont

Postdoctoral researcher in Institut des Sytèmes Complexes

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Professional experience

Oct. 2016 - now **Postdoctoral researcher**, *Centre d'analyse et de mathématique sociales*, resident in the Institut des Sytèmes Complexes, Paris.
Study of the structure of networks such as Twitter for the Politoscope project. The main objective is to detect communities of political activists on Twitter but also, and above all, to track their evolution through time. This allows citizens and journalists to better understand the political organization existing on Twitter.

Oct. 2013 - Oct. 2016 **Ph.D. student**, *Université Pierre et Marie Curie*, in the ComplexNetwork team, LIP6, Paris.
Develop community detection in link streams. Link stream provide a new way to understand temporal networks. A link stream is a sequence of timed interactions between two entities, *e.g.* email exchanges. In this context, a community should be a dense sub-stream, *e.g.* a discussion instead of a group of friends.

Feb. 2013 - July 2013 **End-of-studies internship**, *Thales Air System in the Innovation Lab*, Rungis.
Study and optimization of flight plan predictions on specific way-points.
Key concepts: machine learning, data extrapolation. *Languages:* C++, R.

Sept. 2011 - Feb. 2012 **Software developer internship**, *Commissariat à l'énergie atomique (CEA)*, Brétigny-sur-Orge.
Design and development of an algorithm able to generate quadrilateral mesh under a vector field constraint and geometric constraints. *Key concepts*: paving mesh generation, finite elements. *Language*: C++.

Education

Sept. 2008 - July 2013 **Engineering school**, *Université de Technologie de Compiègne*, in Computer Science, Compiègne.

June 2008 **High school diploma in science**, specialty mathematics, with honors in lycée *Fulbert*, Chartres.

Technical skills

Mathematics Graph theory, complex systems, mathematical optimization, meta-heuristics, constrained programming, basics in cryptography.

Computer **Programming:** Rust, C++, Python, Scala, Spark, PostgreSQL.
Software: Git/svn, Gephi/Tulip, Scilab.
Web: HTML, JavaScript, CSS, PHP.

Publications

In submission

[1] Noe Gaumont, Maziyar Panahi and David Chavalarias. Methods for the reconstruction of the socio-semantic dynamics of political activist Twitter networks: Application to the 2017 French Presidential elections . Submitted to *PlosOne*: `https://hal.archives-ouvertes.fr/hal-01575456v2`

International journal

[2] Noé Gaumont, Clémence Magnien and Matthieu Latapy. Finding remarkably dense sequences of contacts in link streams. *Social Network Analysis and Mining*, 6(1), 87: `https://hal.archives-ouvertes.fr/hal-01390043`

International workshop

[3] Noé Gaumont, Tiphaine Viard, Raphaél Fournier-S'niehotta, Qinna Wang and Matthieu Latapy. Analysis of the temporal and structural features of threads in a mailing-list. In *Complex Networks VII*, Dijon, France. 2016. *Acceptation rate: 23%*: `https://hal.archives-ouvertes.fr/hal-01345821`

[4] Noé Gaumont, François Queyroi, Clémence Magnien and Matthieu Latapy. Expected Nodes: a quality function for the detection of link communities. In *Complex Networks VI*, New-York, USA. 2015. Long version of [5]. *Acceptation rate: 20%*:`http://hal.upmc.fr/hal-01196796`

National conference

[5] Noé Gaumont and François Queyroi. Partitionnement des liens d'un graphe : Critéres et Mesures. In *Algotel - 16èmes Rencontres francophones sur les Aspects Algorithmiues des Télécommunication*, Ile de ré, France. 2014. *Acceptation rate: 55%*: `https://hal.archives-ouvertes.fr/hal-00986216`

[6] Noé Gaumont. Trouver des séquences de contacts pertinentes dans un flot de liens. In *Algotel - 18èmes Rencontres francophones sur les Aspects Algorithmiues des Télécommunication*, Bayonne, France. 2016. Short version of [2]. *Acceptation rate: 60%*: `https://hal.archives-ouvertes.fr/hal-01305118`

Talks

International audience

[7] Noé Gaumont, Maziyar Panahi and David Chavalarias. *Evolution of communities on twitter during the 2017 French presidential election* in Conference Complex Systems (CCS) . 2017: `http://easychair.org/smart-program/CCS'17/2017-09-18.html#talk:47444`

[8] Noé Gaumont, Clémence Magnien and Matthieu Latapy. *Bringing density to link streams reveals meaningful groups in contact traces* in workshop e-Young Researchers Network in Complex Systems. 2015: `http://cs-dc-15.org/e-tracks/global/#yr`

[9] Tiphaine Viard and Noé Gaumont.*LinkStreamViz: a drawing tool for link stream.* In *Workshop Dynamics On and Of networks.* 2016: `https://project.inria.fr/netspringlyon/3-workshops-on-network-sciences/workshop-on-processes-on-and-of-networks/`

National audience

[10] Noé Gaumont.*Utilisation de flots de liens pour étudier les interactions temporelles*, 24e journées thématique de Rochebrune 2017

[11] Noé Gaumont. *Tools to study link streams*, in workshop Outils d'analyse de la dynamique temporelle dans les réseaux in Toulouse, France. 2016: `http://xsys.fr/wp-content/uploads/2016/09/journe%CC%81e-du-14-decembre.pdf`

Scientific responsibilities

Member of the organizing committee of MARAMI 2014 and ASONAM 2015.

Reviewer for: SITIS 2015, WWW 2015, Algotel 2016, ICDE 2016 and Journal of Complex Networks.

Teaching and vulgarisation

Basics of C (100h) and python (20h) programming

Introduction to database with PostgreSQL (20h)

Voluntary animations in various places:

- *Learning HTML and CSS with paper cubes and Thimble*, for children and adults in library.
- *What stay private when surfing on the internet?*, for children and adults in library.
- Presentation of politoscope for the inauguration of the exposition Tera Data at Cité des Sciences. `http://www.cite-sciences.fr/fr/au-programme/expos-temporaires/terra-data/`
- Presentation of politoscope and other ISCPIF projects at Innovatives SHS, a valorisation fair for humanities and social sciences in Marseille `http://innovatives.cnrs.fr/innovatives-shs-2017/exposition/article/expertise`
- Tiphaine Viard and Noé Gaumont. *How research works in computer science*, in the CoFestival, an inclusice event to convey technical and scientific knowledge. `http://web.archive.org/web/20160111020002/http://cofestival.org/#programme`

Training

School on structure and dynamics of complex networks (2 weeks)

Rescom 2014 : Network Science (1 week)

Language skills

English — European level C1. Good working knowledge.
- *TOEIC score in 2012: 960/990.*

German — European level B2. Basic knowledge.

Interest

Open-source software (Mozilla), privacy on the web, sport (bouldering, badminton).