Raphaël Liégeois, PhD

Address EPFL - Campus Biotech
Chemin des Mines, 9
CH-1202 Geneva
Switzerland

Nationality Belgian
Date of Birth January 8, 1988

☎ +412169 55238
✉ Raphael.Liegeois@epfl.ch
www.raphael-liegeois.eu

Representing ULg at the national final of the contest "Ma thèse en 180 secondes"

Education

2011–2015 **PhD in Engineering Sciences**, *University of Liège (ULg)*, Belgium.
"Dynamical modelling from resting-state brain imaging", co-supervision by Prof. R. Sepulchre (ULg/UCambridge) and Prof. S. Laureys (ULg).

2011–2015 **Year 1 & 2 of B.Sc. in Medicine**, *University of Liège*, Belgium.

2005–2011 **M.Sc. and B.Sc. in Biomedical Engineering**, *University of Liège*, Belgium.
Master's Thesis: *"Structured sparse principal component analysis for fMRI imaging"*.

2007–2010 **M.Sc. and B.Sc. in Fundamental Physics**, *University Paris-Sud Orsay*, France.

2007–2009 **Ingénieur Centralien**, *Ecole Centrale Paris*, France.
TIME exchange program - Class of 2010.

Academic and Teaching Experience

2018-Present **Post-Doctoral Research Fellow**, *École Polytechnique Fédérale de Lausanne*, Switzerland.
Under the supervision of Prof. Dimitri Van De Ville.
- Chist-Era Project: Interactive and Visual Analysis of Networks.

2015-2017 **Post-Doctoral Research Fellow**, *National University of Singapore*, Singapore.
Under the supervision of Prof. Thomas Yeo.
- Main supervisor for the Final Year Project "Characterization of Brain Dynamics using Autoregressive Models – Application to Alzheimer's disease".

2011-2015 **Teaching Assistant**, *University of Liège*, Belgium.
Tutoring:
- Systems Modeling, 2011–2015 (Principal Assistant 2013-2015)
- Biomedical Engineering Labs, 2013-2015
- Bioinformatics, 2012-2013
- Linear Control Systems, 2011-2013
- Introduction to Numerical Optimization, 2011-2012

Publications

[P_4] **R. Liégeois**, T. O. Laumann, A. Z. Snyder, H. J. Zhou, and T. Yeo. Interpreting Temporal Fluctuations in Resting-State Functional Connectivity MRI. NeuroImage Vol. 163, pp. 437–455, 2017.

[P_3] **R. Liégeois**, E. Ziegler, C. Phillips, P. Geurts, F. Gomez, M. Bahri T. Yeo, A. Soddu, A. Vanhaudenhuyse, S. Laureys, and R. Sepulchre. *Cerebral functional connectivity periodically (de)synchronizes with anatomical constraints*. Brain Structure and Function, Vol. 221(6), pp. 2985-97, 2016.

[P_2] **R. Liégeois**, B. Mishra, M. Zorzi, and R. Sepulchre. *Sparse plus low-rank autoregressive identification in neuroimaging time series*. Proceedings of the 54th IEEE Conference on Decision and Control (CDC), pp. 3965-3970, 2016.

[P_1] H. Chen, **R. Liégeois**, J. de Bruyn, and A. Soddu. *Principal-component analysis of particle motion*. Physical Review E, Vol.91(4), 2015.

Conference communications

[C_{11}] **R. Liégeois**, J. Li, N. Kuek, R. Kong, C. Orban, J. Zhou, M. Sabuncu, T. Ge, and T. Yeo. *Dynamic and static resting-state functional connectivity encode complementary behavioral information*. OHBM, Singapore, June 2018.

[C_{10}] P. Wang, **R. Liégeois**, R. Kong, G. Deco, M. Van den Heuvel and T. Yeo. *From perception-action to spontaneous thoughts: computational insights into a cortical hierarchy*, OHBM, Vancouver, June 2017.

[C_9] **R. Liégeois**, T. O. Laumann, A. Z. Snyder, H. J. Zhou, and T. Yeo. *Stationarity does not imply absence of brain states: interpreting fluctuations in fMRI connectivity*, OHBM, Vancouver, June 2017.

[C_8] **R. Liégeois**, M. Zorzi and R. Sepulchre. *Dynamical component analysis of fMRI time series*, OHBM, Geneva, June 2016.

[C_7] **R. Liégeois**, C. Phillips, M. Bahri, S. Laureys, and R. Sepulchre. *Total connectivity: a marker of dynamical functional connectivity applied to consciousness*, OHBM, Honolulu, 2015.

[C_6] **R. Liégeois**, M. Bahri, M. Zorzi, S. Laureys, and R. Sepulchre. *Dynamical properties of fMRI connectivity in neuronal networks mediating consciousness*, Selected for an oral presentation at the 2nd Scientific Workshop on Brain Function, Whistler, 2014.

[C_5] **R. Liégeois**, E. Ziegler, C. Phillips, F. Gomez, A. Soddu, S. Laureys, and R. Sepulchre. *Assessing dynamical correlations between functional and structural brain connectivity*, OHBM, Hamburg, 2014.

[C_4] **R. Liégeois**, E. Ziegler, M. Zorzi, A. Soddu, P. Geurts, S. Laureys, and R. Sepulchre. *Dynamics in neuroimaging data analyses*, GIGA research days, Liège, June 2013.

[C_3] **R. Liégeois**, A. Soddu and R. Sepulchre. *Note on how cerebral functional connectivity encodes structural constraints of the human brain*, 32nd Benelux Meeting on Systems and Control, Han-sur-Lesse, Belgium, March 2013.

[C_2] **R. Liégeois**, A. Vanhaudenhuyse, S. Laureys, R. Sepulchre and A. Soddu. *Centering fMRI data or Removing their First PC amounts to Regressing out the Global Signal*, Abstract accepted at OHBM, Seattle, 2013.

[C_1] **R. Liégeois**, A. Soddu and R. Sepulchre. *Large-scale optimization for component analysis of fMRI resting brain data*, 31st Benelux Meeting on Systems and Control, Heijderbos, The Netherlands, March 2012.

Invited talks

[T_8] **R. Liégeois**, *From static to dynamic representations of resting-state Functional Connectivity MRI*, Invited by Prof. M. Breakspear, Queensland Institute of Medical Research, Brisbane, Australia, Octobre 2017.

[T_7] **R. Liégeois**, *From static to dynamic representations of resting-state Functional Connectivity MRI*, Invited by Prof. A. Zalesky, University of Melbourne, Australia, Septembre 2017.

[T_6] **R. Liégeois**, *Sparse plus low-rank graphical models identification in neuroimaging time series*, Invited by Prof. J. Songsiri, Chulalongkorn University, Bangkok, Thailand, October 2016.

[T_5] **R. Liégeois**, *Exploring brain dynamics to characterize Alzheimer's disease*, Rotary Seminars, Invited by the Rotary Club of Tanjong Pagar, Singapore, October 2016.

[T_4] **R. Liégeois**, *Defining dynamical markers of functional connectivity*, Seminar series of the Clinical Imaging Research Center, Singapore, July 2016.

[T_3] **R. Liégeois**, B. Mishra, and R. Sepulchre. *Optimizing the low-rank plus sparse decomposition of graphical models*, FNRS FRANSO Meeting, Liège, May 2015.

[T_2] **R. Liégeois**, *Time and time series*, The ULg-PhD meeting, Liège, January 2015.

[T_1] **R. Liégeois**, *Spectral properties of fMRI time series fluctuations on cerebral anatomy*, Resting fMRI workshop, Pitié-Salpetrière Hospital, Paris, June 2013.

Awards and Grants

2015–2017 **Wallonie-Bruxelles International Excellence Grant** for postdoctoral project.

2015–2017 **Rotary-International Foundation Grant** for postdoctoral project.

2015 **Lear Foundation Grant** for a research stay at the University of Cambridge.

2014 **Contest: "Ma thèse en 180 secondes":** laureate for the University of Liège.

2011 **Salier Prize of the best Master's thesis**.

2005 **University of Liège Engineering Admission Exam:** ranked first.

Languages

French	Mother tongue	German	Medium
English	Proficiency level	Mandarin	Beginner
Dutch	Proficiency level		

Interests

Associations Organization of the first Pecha-Kucha Night in Liège starring ULg researchers presenting their work to a wide audience, Nov. 2014

Scientific staff representative for the department, 2013-2015

Sports Hot Air Balloon: pilot, fellow member of the Belgian Balloon Club

Glider: pilot

Rowing, swimming, horse riding, circus arts

Travelling North America, India, North Africa, Europe, Russia, Mongolia, China, South-East Asia, to be continued...

Music Piano, Guitar, Organ and Saxophone