# Juste Raimbault

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ORCID : 0000-0003-0768-9480

## Education

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| Feb. 2015–expected Feb. 2018 | **PhD in Geography**, *Géographie-cités (UMR 8504 CNRS) / LVMT (UMR-T 9403 IFSTTAR)*, Paris, France.<br>Towards Models Coupling Urban Growth and Transportation Network Growth, *under the supervision of* HDR A. BANOS *and* MCF F. LE NECHET. |
| June 2016 | **SFI Complex Systems Summer School**, *Santa Fe Institute*, Santa Fe, USA. |
| 2012–2014 | **MSc Complex Systems Science**, *Ecole Polytechnique ParisTech*, Palaiseau, France.<br>Agent-based modeling, Evidence-based methods from Therapeutic Evaluation, Theoretical Analysis of Physical Complex Systems, Epistemology, Complex Networks, Datamining, Signal Processing<br>*Memoire :* Complex Network Analysis for Real-time Trend Detection in a Financial System |
| 2013–2014 | **MSc Urbanism, Environment, Transportation**, *Ecole Nationale des Ponts et Chaussées ParisTech*, Marne-la-Vallée, France.<br>Analysis of Territorial Systems, Management and design of Transportation Systems, Urbanism, History of Urbanism, Urban Economics, Environmental Planning and Design<br>*Memoires :* Application of Evidence-based Methods in Urban Planning and Architecture ; Discrete Choice Models for Bike-sharing Transportation Systems |
| 2010–2012 | **BSc**, *Ecole Polytechnique ParisTech*, Palaiseau, France.<br>Multidisciplinary scientific formation (mathematics, computer science, applied mathematics, physics, mecanics, biology, economics) |

## Publications

Raimbault, J. (2017). Identification of Causalities in Spatio-temporal Data, forthcoming in *Sageo 2017 Proceedings.* arXiv:1709.08684

Raimbault, J. (2017). An Applied Knowledge Framework to Study Complex Systems, forthcoming in *CSD&M 2017 Proceedings.* arXiv:1706.09244

Raimbault, J. & Bergeaud, A. (2017). The Cost of Transportation: Spatial Analysis of Fuel Prices in the US, forthcoming in *EWGT 2017 proceedings.* arxiv:1706.07467

Bergeaud, A., Potiron, Y., & Raimbault, J. (2017). Classifying patents based on their semantic content. *PloS one, 12*(4), e0176310.

Raimbault, J. (2017). A Discrepancy-Based Framework to Compare Robustness Between Multi-attribute Evaluations. In *Complex Systems Design & Management* (pp. 141-154), Springer.

Raimbault, J. (2017). Investigating the empirical existence of static user equilibrium. *Transportation Research Procedia*, 22, 450-458.

Raimbault, J. (2016). Generation of Correlated Synthetic Data, *Actes des Journées de Rochebrune 2016.*

Raimbault, J. (2015). Models Coupling Urban Growth and Transportation Network Growth: An Algorithmic Systematic Review Approach, *ECTQG 2015 proceedings.* arXiv:1605.08888

Raimbault, J. (2014). User-Based Solutions for Increasing Level of Service in Bike-Sharing Transportation Systems. In *Complex Systems Design & Management* (pp. 31-44), Springer. **Best Student Paper Award at CSDM 2014.**

Raimbault, J., Banos, A. & Doursat, R. (2014) A Hybrid Network/Grid Model of Urban Morphogenesis and Optimization. *Proceedings of the 4th International Conference on Complex Systems and Applications* (ICCSA 2014), June 23-26, 2014, Université de Normandie, Le Havre, France; M. A. Aziz-Alaoui, C. Bertelle, X. Z. Liu, D. Olivier, eds.: pp. 51-60.

## Communications

Complexity, Complexities and Complex Knowledge, *Geodivercity International Workshop, Paris, October 2017.*

Modeling the Co-evolution of Urban Form and Transportation Networks, *Conference on Complex Systems 2017, Cancun, Sept. 2017.*

Raimbault J. & Baffi S. (2017). Structural Segregation: Assessing the impact of South African Apartheid on Underlying Dynamics of Interactions between Networks and Territories, *ECTQG 2017, York, Sept. 2017*

Invisible Bridges ? Scientific landscapes around similar objects studied from Economics and Geography perspectives, *ECTQG 2017, York, Sept. 2017*

Cottineau C., Raimbault J., Le Texier M., Le Néchet F. & Reuillon R. (2017). Initial spatial conditions in simulation models: the missing leg of sensitivity analyses?, *Geocomputation 2017, Leeds, Sept. 2017*

A macro-scale model of co-evolution for cities and transportation networks, *Medium International Conference, Guangzhou, June 2017*

Losavio C. & Raimbault J. (2017). Agent-based Modeling of Migrant Workers Residential Dynamics within a Mega-city Region: the Case of Pearl River Delta, China, *Urban China Development International Conference, London, May 2017*

Co-construire Modèles, Etudes Empiriques et Théories en Géographie Théorique et Quantitative: le cas des Interactions entre Réseaux et Territoires. *Treizièmes Rencontres de ThéoQuant, Besançon, May 2017*

Un Cadre de Connaissances pour une Géographie Intégrée. *Journée des jeunes chercheurs de l'Institut de Géographie de Paris, Paris, April 2017*

Towards a Theory of Co-evolutive Networked Territorial Systems: Insights from Transportation Governance Modeling in Pearl River Delta, China. *Medium Seminar-Urban Sustainable Development in Zhuhai, Guangzhou, December 2016*

Models of growth for system of cities : Back to the simple, *Conference on Complex Systems 2016, Amsterdam, Sep 2016.*

Raimbault J., Bergeaud A. and Potiron Y. (2016). Investigating Patterns of Technological Innovation. *Conference on Complex Systems 2016, Amsterdam, Sep 2016.*

For a Cautious Use of Big Data and Computation. *Royal Geographical Society - Annual Conference 2016 - Session : Geocomputation, the Next 20 Years (1), London, Aug 2016.*

Indirect Bibliometrics by Complex Network Analysis. *20e Anniversaire de Cybergeo, Paris, May 2016.*

Raimbault, J. & Serra, H. (2016). Game-based Tools as Media to Transmit Freshwater Ecology Concepts, *poster corner at SETAC 2016, Nantes, May 2016.*

Le Nechet, F. & Raimbault, J. (2015). Modeling the emergence of metropolitan transport authority in a polycentric urban region, *ECTQG 2015, Bari, Sept. 2015.*

Hybrid Modeling of a Bike-Sharing Transportation System, *poster at ICCSS 2015, Helsinki, June 2015.*

Raimbault, J. & Gonzales, J. (2015). Application de la Morphogénèse de Réseaux Biologiques à la Conception Optimale d'Infrastructures de Transport, *poster presented at Rencontres du Labex Dynamite, Paris, May 2015.*

## Working Papers

Raimbault, J. (2017). Calibration of a Density-based Model of Urban Morphogenesis. arXiv:1708.06743

Raimbault, J. & Marandon E. (2016). Optimizing the Extraction of Information from a Complex System.

## Grants and Award

**MEDIUM mobility grant**, Young Researcher mobility grant for China, MEDIUM project.

**PhD grant**, *allocation doctorale AMX* for three years from Graduate School, Ecole Polytechnique.

**Best Student Paper Award** at Conference CSD&M, Paris, December 2014.

## Teaching

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| Spring 2017 | **Teaching Assistant**, *Université Paris 7*, Paris, France.<br>Teaching Assistant: *Statistics and Cartography*, *Spatial Analysis* and *Professionalization for Geographers.* |
| February 2016 | **Seminar Geography and Big Data**, *Université Paris 1 Sorbonne*, Paris, France.<br>*Géoprisme* Master Seminar |
| Fall 2015 | **Teaching Assistant**, *Université Paris 7*, Paris, France.<br>Teaching Assistant: *Introduction to Geography* and *Introduction to GIS.* |

## Scientific Activity

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| since 2016 | Reviewing for *Cybergeo, European Journal of Geography*; Reviewing for *PLoS ONE* |
| Sept. 2017 | ECTQG 2017. Session organisation: *Bridges between Economics and Geography: Lessons from Modeling Perspectives* |
| June 2017 | Medium Conference 2017. Session organisation: *Spatio-temporal Behavior in Complex Urban Systems* |
| June 2014 | EMCSS Seminar organisation: Comparing Top-down and Bottom-up approaches to Urban Systems |

## Research experience

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| Aug.–Dec. 2014 | **Research internship**, *L2 Technologies*, Paris, France.<br>Complex Systems approaches to foreign exchange financial markets |
| April–Sept. 2013 | **Research internship**, *Chalmers University of Technology, Dpt. of Architecture*, Göteborg, Sweden.<br>Interdisciplinary approaches of modeling and simulations in urban planning and architecture |
| July–Sept. 2012 | **Research internship**, *The Kube SA*, Paris, France.<br>Machine Learning and Artificial Intelligence : Design and implementation of an intelligent matching algorithm |

## Computer skills

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| OS | Unix (OSX, CentOS) | Scripts | Shell, AppleScript |
| Programming | Java, Python, Scala, C/C++, OCaml | Typography | LaTeX, API OO.org |
| Web | php, XHTML, CSS, AJAX | Database | MySQL, MongoDB, PostgreSQL |
| Scientific | R, NetLogo, Gama, OpenMole, Scilab, Matlab, Gephi | GIS | QGIS, PostGIS, TransCAD, Ocad |

## Languages

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| **French**, *Native* | **English**, *Fluent* |
| **German**, *Fluent, European Baccalaureate* | **Mandarin**, *Notions, level HSK3* |