

## Marian-Andrei RIZOIU

**address:** CECS, The Australian National University, Canberra, ACT 2601, Australia  
**email:** [marian-andrei@rizoiu.eu](mailto:marian-andrei@rizoiu.eu)  
**telephone:** +61 (0)2 6125 8605  
**website:** <http://www.rizoiu.eu/>



# CURRICULUM VITAE

## Research interests

**Interests** My current research is focused on analyzing the dynamics of human attention, modeling behavior and user privacy in the online environment. I develop and validate theoretical models for information diffusion, which account for complex social phenomena, such as the rise and fall of online popularity, the emergence of grass-root movements or the adoption of disruptive technologies.

My other research interests are knowledge injection into non-supervised learning algorithms and into data representation, temporal evolving data, spatial-temporal clustering, textual clustering, analysis of complex data (textual, image), natural language processing and semantic image representation.

**Keywords**

- social network analysis, online human attention, online privacy;
- typical evolution paths, complex data, semi-supervised clustering, data representation.

## Education background

2009 – 2013 **PhD in Computer Science**, ERIC laboratory, University Lumière Lyon, France.  
(June 24<sup>th</sup> 2013) “Semi-supervised structuring of complex data”, supervision S. Lallich and J. Velcin.

2008 – 2009 **Masters Degree in Data Mining and Knowledge Engineering**,  
(double diploma) Polytechnic School of the University of Nantes, France.

2004 – 2009 **Engineer Degree in Systems and Computer Engineering**  
Department of Computer Science, Polytechnic University of Bucharest, Romania.

## Employment history

03/2016 – **Research Fellow, College of Eng. and Comp. Science, Australian National University.**  
current *Teaching:* Advanced Databases and Data Mining, Document and Social Media Analysis  
*Research:* theoretical diffusion models, content conductance, online promotion  
*Supervision:* 2 PhD students, 4 Masters/Honors students.

2014 – 2016 **Research Scientist, Optimization Research Group, NICTA Canberra, Australia.**  
*Teaching:* Social Media Analysis.  
*Research:* online privacy, popularity modeling and prediction  
*Supervision:* 1 PhD student, 1 Masters/Honors student.

2013 – 2014 **Postdoctoral Fellow, ERIC laboratory, University Lumière Lyon.**  
*Teaching:* Numerical Machine Learning, Software Development Methodologies, Data Mining  
*Research:* ontology construction, concept evolution, knowledge graphs.

2009 – 2013 **Adj. Assistant Professor, Dept. of Computer Science, University Lumière Lyon.**  
*Teaching:* Object Oriented Programming, Unix Operating Systems, Calculus software.  
*Supervision:* end of diploma internships, academic software development.

summer 2013 **Research intern, Machine Learning group, NICTA Sydney, Australia.**

## Grants and projects

2015 – **US Air Force Research Office, "The Anatomy of Social Media Popularity", USD\$555K**  
present Role: **co-PI**, Develop theoretical models for predicting the popularity of online cultural items.

2014 – **Data61 CSIRO, “Human Dynamics”, role: key personnel**  
present Model and predict social and financial networks, crowdsourcing, urban economics, and evolutionary dynamics.

- 2012 – 2014 **French National Research Agency, “Images on the Web”**, role: **key personnel**  
Analyze the image life cycles of politicians and companies through the online media and microblogging; construct and evolve a set of concepts starting from Natural Language Text.
- 2012 – 2014 **University Lumière Lyon (internal funding), “Evolution of discourse on nuclear medicine”**, role: **lead-PI**  
Develop language models to account for the evolution of the specialized discourse of the domain of nuclear medicine, evolution of topics & populations.
- 2010 – 2011 **University Lumière Lyon (internal funding), “Detecting business owners from mortuary texts”**, role: **lead-PI**  
Analyze complex data (image and text) to detect business owners from 18<sup>th</sup> and 19<sup>th</sup> century, from mortuary texts.
- 2009 **Rhône-Alpes local government, “CONVERSESSION”**, role: **key personnel**  
Design of a novel platform for analyzing online debates. Incubation of a start-up enterprise.

## Recent invited talks

- 03/2016 **Evolution of Privacy Loss in Wikipedia**. Invited talk, March session of the Monthly Wikimedia Research Showcase, San Francisco, USA.
- 06/2015 **Challenges of the social media: Information diffusion in social networks**. Invited speaker, Romanian Scientific and Business Diaspora Symposium, Canberra, Australia.
- 05/2015 **Semi-supervised analysis of complex data**. Invited talk. University of Nice, Sophia-Antipolis, France.
- 10/2013 **CommentWatcher: an open-source platform for analyzing online forum discussions**. Invited speaker, BLEND 2013 conference, Lyon, France.

## Competences, activities, services and awards

**Languages** English (professional, IELTS 8.5/9), **French** (professional), **Romanian** (native).

**Reviewing** The journal IEEE Transactions on Multimedia; the conferences ICWSM, NIPS and FLAIRS.

**Awards and grants** **Best student paper award:** International Conference on Tools with Artificial Intelligence, Athens, Greece (2012)  
**Travel Grants:** Rhône-Alpes local government (2013), ECR Travel Awards (2015).  
**Material Grant:** NVIDIA GPU Grant Program (2015).

**Technical skills** **General Keywords:** data mining , statistical analysis, academic software development, advising student research and development projects, participation in large projects with multiple partners, collaboration with private enterprises in private-academic projects.  
**Programming Languages:** Java, C/C++, Visual Basic, PL / SQL, Xquery, Xpath, SpartQL, PHP, Bash, Python, Perl, *etc*  
**Developing:** Lead developer of academic open-source web-based software *CommentWatcher*<sup>1</sup>: analyzing online discussion forums and visualizing the online social networks induced by these forums.

**Social and organizing skills** **2010 – 2012:** Elected PhD student representative in the council of the ERIC laboratory.  
**October 2012:** Head of the volunteer team and member in the organization committee of the international conferences *Discovery Science 2012* and *Algorithm Learning Technology 2012*, Lyon.  
**August 2011:** Member in the organization committee of the international conferences *Web Intelligence 2011* and *Intelligent Agent Technology 2011*, organized co-jointly at Lyon.

**Divers** I play the piano. Second prize at the artistic national contest “Young Talents”, 1998, Romania.

1 Presentation site and source code: <http://rizoiu.eu/commentwatcher>

# Publications

## International journals:

- [1] Rizoïu, M.-A., Velcin, J., Bonnevey, S., & Lallich, S. *ClusPath: A Temporal-driven Clustering to Infer Typical Evolution Paths*. *Data Mining and Knowledge Discovery (DAMI)*, 30(5), pp. 1324-1349, (2016). **(ERA Rank: A, h5: 33)<sup>2</sup>**
- [2] Rizoïu, M.-A., Velcin, J. & Lallich, S., *How to use Temporal-Driven Constrained Clustering to detect typical evolutions*. *International Journal of Artificial Intelligence Tools (IJAIT)*, vol. 23(4), (2014). **(h5: 13)**
- [3] Rizoïu, M.-A., Velcin, J. & Lallich, S., *Semantic-enriched Visual Vocabulary Construction in a Weakly Supervised Context*. *Intelligent Data Analysis (IDA)*, vol. 19(1), pp. 161-185, (2015). **(ERA Rank: B, h5: 16)**
- [4] Rizoïu, M.-A., Velcin, J. & Lallich, S., *Unsupervised Feature Construction for Improving Data Representation and Semantics*. *Journal of Intelligent Information Systems (JIIS)*, vol. 40(3), pp. 501-527, (2013). **(ERA Rank: C, h5: 21)**

## International conferences:

- [5] Rizoïu, M.-A., Xie, L. *Online Popularity under Promotion: Viral Potential, Forecasting, and the Economics of Time*. In: *Proceedings of International AAAI Conference on Web and Social Media (ICWSM '17)*, Montreal, Canada, pp. 1–10, 2017. **(a.r.: 14%, h5: 59)**
- [6] Rizoïu, M.-A., Xie, L., Sanner, S., Cebrian, M., Yu, H., & Van Hentenryck, P., *Expecting to be HIP: Hawkes Intensity Processes for Social Media Popularity*. In: *Proceedings of International Conference on World Wide Web (WWW '17)*, Perth, Australia, pp. 1–9, 2017. **(CoRE Rank: A\*, a.r.: 17%, h5: 74)**
- [7] Mishra, S., Rizoïu, M.-A., & Xie, L., *Feature Driven and Point Process Approaches for Popularity Prediction*. In: *Proceedings of International Conference on Information and Knowledge Management (CIKM '16)*, Indianapolis, USA, p. 1069–1078, 2016. **(CoRE Rank: A, a.r.: 17%, h5: 42)**
- [8] Rizoïu, M.-A., Xie, L., Caetano, T., & Cebrian, M., *Evolution of Privacy Loss in Wikipedia*. In: *Proc. International Conference on Web Search and Data Mining (WSDM '16)*, San Francisco, USA, pp. 215-224, February 2016. **(CoRE Rank: A\*, a.r.: 18%, h5: 58)**
- [9] Kim, Y.-M., Velcin, J., Bonnevey, S., & Rizoïu, M.-A., *Temporal Multinomial Mixture for Instance-Oriented Evolutionary Clustering*. In: *37<sup>th</sup> European Conference on Information Retrieval (ECIR '15)*, Vienna, Austria, pp. 593–604, Springer, March 2015. **(CoRE Rank: B, a.r.: 23%, h5: 25)**
- [10] Rizoïu, M.-A., *Semi-Supervised Structuring of Complex Data*. In: *Doctoral Consortium of the 23<sup>rd</sup> International Joint Conference On Artificial Intelligence (IJCAI '13)*. Beijing, China. AAAI Press. 2013. **(CoR Rank: A\*, h5: 55)**
- [11] Rizoïu, M.-A., Velcin, J. & Lallich, S., *Structuring typical evolutions using Temporal-Driven Constrained Clustering*. In: *24<sup>th</sup> International Conference on Tools with Artificial Intelligence (ICTAI '12)*, Athens, Greece, pp. 610-617, IEEE, November, 2012. **Best Student Paper Award. (CoRE Rank: B, h5: 17)**
- [12] Musat, C., Velcin J., Trausan-Matu, S., & Rizoïu M.-A. *Improving Topic Evaluation Using Conceptual Knowledge*. In: *22<sup>nd</sup> International Joint Conference On Artificial Intelligence (IJCAI '11)*. Barcelona, Spain. pp. 1866-1871, AAAI Press. July, 2011. **(CoRE Rank: A\*, h5: 55)**
- [13] Musat, C., Velcin J., Rizoïu M.-A., & Trausan-Matu, S. *Improving Topic Models using Conceptual Data*. In: *19<sup>th</sup> International Symposium on Methodologies for Intelligent Systems (ISMIS '11)*. Warsaw, Poland. pp. 133–142. June 2011. **(CoRE Rank: C, h5: 11)**

## National scope journals and conferences:

- [14] Rizoïu, M.-A., Velcin, J., & Chauchat, J.-H., *Regrouper les données textuelles et nommer les groupes à l'aide des classes recouvrantes*. In: *10<sup>ème</sup> conférence Extraction et Gestion des Connaissances (EGC '10)*, Hammamet, Tunisia; Vol. E-19, p. 561-572. January, 2010. **(h5: 6)** (in French)
- [15] Musat, C., Rizoïu M.-A., & Trausan-Matu, S., *An Intra and Inter-Topic Evaluation and Cleansing Method*. *Romanian Journal of Human-Computer Interaction (RRIOC)*, vol. 3 (2010) pp. 81-96. (in Romanian)

## Book chapters:

- [16] Rizoïu, M.-A., Lee, Y., Mishra, S., & Xie, L. *A Tutorial on Hawkes Processes for Events in Social Media*. In “*Research Frontiers of Multimedia*”, S.-F. Chang (Ed.), (2017), pp. 1–26, ACM Books.
- [17] Rizoïu, M.-A. & Velcin, J. *Topic Extraction for Ontology Learning*. In book: “*Ontology Learning and Knowledge Discovery Using the Web: Challenges and Recent Advances*” (2011), chapter 3, pp. 38-61.

## Theses

- [18] Rizoïu, M.-A. *Semi-Supervised Clustering of Complex Data*. PhD thesis, University Lumière Lyon, France. June 2013.
- [19] Rizoïu, M.-A. *Textual Data Clustering and Cluster Naming*. Masters Thesis, University of Nantes, France, June 2009.