Marian-Andrei RIZOIU
address: CB11.06.101, UTS, 15 Broadway, Ultimo NSW 2007
email: marian-andrei@rizoiu.eu
telephone: +61 (0)435 247 215
website: http://www.rizoiu.eu/

CURRICULUM VITAE

Employment history

01/2019 – current:
Lecturer, Faculty of Engineering and IT, University of Technology in Sydney
Research: information diffusion models, online popularity prediction models, stochastic processes
Supervision: 1 postdoc, 4 PhD students, 3 Masters/Honours students/Research Assistants.

2016 – 2019
Research Fellow, Lecturer, Eng. and Comp. Science, Australian National University
Research: information diffusion models, online popularity prediction models, stochastic point processes, machine learning and social media analysis.
Teaching: Document Analysis, Advanced Databases and Data Mining (Bachelors/Masters).
Leadership: course convener for the Document Analysis course, co-PI for two research grants,
Supervision: 4 PhD students (2 as main supervisor), 3 Masters/Honours students.

2014 – 2016
Research Scientist, Optimisation Research Group, National ICT Australia (NICTA)
Research: online privacy, big social data analytics, data mining.
Leadership: engage with Data61's Ribbit
Supervision: 2 PhD students, 1 Masters/Honours student.

2013 – 2014
Postdoctoral Fellow, ERIC laboratory, Lumière University Lyon, France.
Research: ontology construction from text, knowledge graphs evolution for brand management.
Teaching: Machine Learning, Software Development Methodologies, Data Mining, Object Oriented Programming, Unix Operating Systems, Calculus software (course convener)
Supervision: 4 Honours theses, 9 industrial internships.
Leadership: developed the Machine Learning course.

Education background

2009 – 2013
(June 24th 2013)
PhD in Computer Science, Lumière University Lyon, France.
"Semi-supervised structuring of complex data", supervision S. Lallich and J. Velcin.

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

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

Grants, Projects and Consulting – AU$0.6M in secured funding

2020:
Facebook Research grants, **"Using computational modelling of user behaviour and machine learning to counter the diffusion of hate speech across social media"**, US$60k, Chief Investigator. Use ethnographic methods to identify and monitor a number of persona associated with hate speech diffusion targeting vulnerable populations.

2019 – 2020:
National Security College's Green policy grants, "**Tracking Disinformation Campaigns Across Terrains: Implications for Policy**", AU$50K, Chief Investigator. Quantify the scale of the problem of disinformation in order to co-design responses with policy partners.

2019 – 2020:
UTS FEIT Cross-Faculty Scheme, "**SocialSense: Making sense of the opinions and interactions of online users**", AU$20K, Chief Investigator. Study the diffusion and polarization of opinions online, mixing an ethnographic approach with computational modelling of behaviour.

2019:
Data61 Challenge model grants, "**Adaptive skills taxonomy to enable labour market agility"**, AU$350K, Chief Investigator. Understand the change of demand and supply of skills in a timely and efficient manner in order to provide information to inform employment decisions.

2019
Industrial consulting with a merger/acquisition. AU$10.5k, Chief Investigator.

2018
ANU Social Science Cross-College Grants, **"Advanced tools and methods for analysing the role and influence of bots in social media"**, AU$50K, Chief Investigator The impact of automation in

the form of socialbots on deliberative democracy – how socialbots hijack the public discourse.

2018	ANU Social Science Cross-College Grants, **"Identify Hate Speech and Predict Mass Atrocities"**, AU$30K, Chief Investigator. Can "hate speech" be reliably measured to predict political violence?
2015 – 2018	US Air Force Research Office, **"The Anatomy of Social Media Popularity"**, key personnel. Develop theoretical models for predicting the popularity of online content.
2012 – 2014	French National Research Agency, **"Images on the Web"**, key personnel. Analyse the image life cycles of politicians and companies through online media; apply natural language processing for ontology construction.

Honours, awards, prizes and service

Service	Served in the Expert Round table for the Defamation Law Reform, for the attorney general's office.
PC member	WWW'19, AAAI'19, ICWSM'19, WWW'20, AAAI'20.
Reviewing	Journal of Machine Learning Research, Journal IEEE Transactions on Multimedia, Computational Intelligence, Transactions on Information Systems, Journal Transactions on Knowledge Discovery from Data; conferences WWW, ICWSM, NIPS, AAAI.
Research visits	March 2019: One month research visit in Saint Etienne at the French CNRS laboratory Hubert Curien, collaborating with Prof. Christine Largeron on information diffusion in online communities.
Conference organisation	**10/2012:** Discovery Science 2012 and Algorithm Learning Technology 2012, Lyon. **09/2011**: Web Intelligence 2011 and Intelligent Agent Technology 2011, Lyon.
Awards, material and travel grants	**Awards:** ERASMUS International student exchange award (2009), Best student paper award ICTAI, Athens, Greece (2012). **Travel Grants:** Rhône-Alpes local government (2013), ECR Travel Awards (2015, 2018). **Material Grant:** NVIDIA GPU Grant Program (2015).

Interests & Skills

Research	• Stochastic behavioural modelling; online information diffusion; online popularity modelling. • Detecting disinformation campaigns and malicious activity, information warfare, online influence and disruptive socialbots in democratic processes. • Labour markets in automation age, measuring skill similarity, labour upskilling, job ads data.
Technical skills	• big data mining and analysis, machine learning, natural language processing, online social media analysis, statistical analysis, industrial project collaboration

Recent invited talks

11/2019	**Information warfare: socialbots and Russian online trolls in the US elections.** Invited talk at the Defence Science and Technology (DST), Adelaide, Australia.
05/2019	**#DebateNight: Role of Twitter Socialbots During US Presidential Debate.** Invited talk at the Computer Society of the IEEE ACT Section, Canberra, Australia.
06/2018	**Hawkes Intensity Processes for modelling online popularity and virality**. Invited talk at Facebook Core Research, Palo Alto, California, USA.
06/2018	**User engagement with online video and the unpredictability of online popularity.** Invited talk at Netflix Research, San Jose, California, USA.
05/2018	**Scalable influence estimation from online information diffusions.** Research visit at the Max Plank Institute for Software Systems, Kaiserslautern, Germany.
06/2017	**Hawkes Intensity Processes for Social Media Popularity.** University of Sydney, Australia.
03/2016	**Evolution of Privacy Loss in Wikipedia**. Invited talk, March session of the Monthly Wikimedia Research Showcase, San Francisco, USA.

Teaching, supervision & academic software

Teaching &	• 600+ hours of teaching experience at all levels in **Software Engineering**, **Data Science** and

supervision	**Machine Learning**[1], course coordinator (convenor).

- 45+ supervised students: 4 PhD students, 2 RA/postdoc, 1 visiting postgrad students, 5 Honours students, 4 summer scholar students, more than 30 coursework masters students;
- **research group:** 1 postdoc, 4 PhD students (main supervisor), 1 masters/Honours, 1 RA

Open-source software development	•	*HIPie* describes and predicts the online popularity of Youtube videos (2017) [Kong et al, WWW18].

Public live version: www.hipie.ml   Demo video: https://youtu.be/x5xIf4vUScI

Source code: https://github.com/computationalmedia/hipie

- *CommentWatcher* analyses online discussion forums and their social networks of users (2014).

Website: http://rizoiu.eu/commentwatcher   Demo video: http://rizoiu.eu/commentwatcher/Video_demonstration.html

Selected recent publications

Publications summary: 36 peer reviewed publications, 378 citations, H-index 10 (source: *Google Scholar 03/2020*)[2].
Full publication list at http://www.rizoiu.eu/#publications

[1] Kern, M. L., McCarthy, P. X., Chakrabarty, D., & **Rizoiu, M.-A.** (2019). *Social media-predicted personality traits and values can help match people to their ideal jobs.* Proceedings of the National Academy of Sciences **(PNAS)**, 201917942. **(CoRE: A*, H5: 227, I.F.: 9.674)**

[2] Kong, Q., **Rizoiu, M.-A.**, & Xie, L. (2020). *Modeling Information Cascades with Self-exciting Processes via Generalized Epidemic Models.* In ACM International Conference on Web Search and Data Mining **(WSDM'20).** Houston, Texas. **(CoRE Rank: A*, a.r.: 15%, h5: 51)**

[3] Wu, S., **Rizoiu, M.-A.**, & Xie, L. *Estimating Attention Flow in Online Video Networks.* In ACM Conference on Computer-Supported Cooperative Work and Social Computing **(CSCW'19)**, pp. 1-21. 2019.

[4] Kim, D., Graham, T., Wan, Z., & **Rizoiu, M.-A.** Analysing user identity via time-sensitive semantic edit distance (t-SED): A case study of Russian trolls on Twitter. **Journal of Computational Social Science**. pp.1-21, 2019.

[5] Zhang, R., Walder, C., **Rizoiu, M.-A.**, & Xie, L. *Efficient Non-parametric Bayesian Hawkes Processes.* In: International Joint Conference on Artificial Intelligence **(IJCAI'19)**, Macao, China, 2019. **(CoRE Rank: A*, a.r.: 17%, h5: 61)**

[6] **Rizoiu, M.-A.**, Mishra, S., Kong, Q., Carman, M., & Xie, L. *SIR-Hawkes: Linking Epidemic Models and Hawkes Processes to Model Diffusions in Finite Populations.* In: Proceedings of International Conference on World Wide Web **(WWW '18)**, Lyon, France, pp. 1–9, 2018. **(CoRE Rank: A*, a.r.: 14%, h5: 77)**

[7] **Rizoiu, M.-A.**, Graham, T., Zhang, R., Zhang, Y., Ackland, R. J., & Xie, L, *#DebateNight: The Role and Influence of Socialbots on Twitter During the 1st U.S. Presidential Debate.* In International AAAI Conference on Web and Social Media **(ICWSM'18)**, pp. 1–10, 2018. **(a.r.: 16%, h5: 52)**

[8] Wu, S., **Rizoiu, M.-A.**, & Xie, L, (2017). *Measuring Video Engagement: An Empirical Study on YouTube.* In Proceedings of the International Conference on Web and Social Media **(ICWSM '18)**, pp. 1–9, 2018. **(a.r.: 16%, h5: 52)**

[9] Mishra, S., **Rizoiu, M.-A.**, & Xie, L, *Modeling Popularity in Asynchronous Social Media Streams with Recurrent Neural Networks.* In International Conference on Weblogs and Social Media **(ICWSM'18)**, pp. 1–10, 2018. **(a.r.: 16%, h5: 52)**

[10] Kong, Q., **Rizoiu, M.-A.**, Wu, S., & Xie, L. (2018). *Will This Video Go Viral? Explaining and Predicting the Popularity of Youtube Videos.* In: Proceedings of International Conference on World Wide Web Companion **(WWW '18)**, Lyon, France, pp. 1–4, 2018. **(CoRE Rank: A*, h5: 77)**

[11] **Rizoiu, 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.

[12] **Rizoiu, 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)**

[13] **Rizoiu, 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. 735-744, 2017. **(CoRE Rank: A*, a.r.: 17%, h5: 74)**

[14] Mishra, S., **Rizoiu, 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)**

[15] **Rizoiu, 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)**

[16] **Rizoiu, M.-A.**, Velcin, J., Bonnevay, 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)**

[17] **Rizoiu, M.-A.**, *Semi-Supervised Structuring of Complex Data.* In: Doctoral Consortium of the 23rd International Joint Conference On Artificial Intelligence **(IJCAI '13)**. Beijing, China. AAAI Press. 2013. **(CoRE Rank: A*, h5: 55)**

[18] Musat, C., Velcin J., Trausan-Matu, S., & **Rizoiu M.-A.** *Improving Topic Evaluation Using Conceptual Knowledge.* In: 22nd International Joint Conference On Artificial Intelligence **(IJCAI '11)**. Barcelona, Spain. pp. 1866-1871, AAAI Press. July, 2011. **(CoRE Rank: A*, h5: 55)**

1 *See full teaching & supervision experience at* http://www.rizoiu.eu/documents/RIZOIU_teaching-statement.pdf
2 *Metrics key.* **ERA/CoRE**: *Australian Publication Ranking;* **a.r.**: *acceptance rate for conferences;* **h5**: *the h5 metric of the venue (source Google Scholar).*