### **Marian-Andrei Rizoiu** – CV

Lecturer, The Data Science Institute, University of Technology Sydney

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| --- | --- | --- | --- | --- |
| **Web** | | |  |  |
|  | [ORCID:](http://orcid.org/0000-0003-0381-669X) | [orcid.org/0000-0003-0381-669X](http://orcid.org/0000-0003-0381-669X) | | |
|  | Laboratory: | [www.behavioral-ds.ml](https://www.behavioral-ds.ml/) | | |
|  | Personal: | [www.rizoiu.eu](http://www.rizoiu.eu/) | | |
|  | Google Scholar: | [scholar.google.com/citations?user=J9sjxXYAAAAJ](https://scholar.google.com/citations?user=J9sjxXYAAAAJ) | | |
|  | Other: | [theconversation.com/profiles/marian-andrei-rizoiu-850922](https://theconversation.com/profiles/marian-andrei-rizoiu-850922) | | |

### **Overview**

Dr Marian-Andrei Rizoiu is a lecturer in Computer Science at the University of Technology Sydney. He is interested in stochastic behavioural modelling of human actions online, at the intersection of applied statistics, artificial intelligence and social data science. He leads the [Behavioral Data Science group](https://www.behavioral-ds.ml/), which studies human attention dynamics in the online environment, the emergence of influence and opinion polarisation.

His research has made several key contributions to online popularity prediction, real-time tracking and countering disinformation campaigns, and understanding shortages and mismatches in labour markets. First, he has developed theoretical models for online information diffusion, which can account for complex social phenomena, such as the rise and fall of online popularity, the spread of misinformation, or the adoption of disruptive technologies. Second, he built a skill-based real-time occupation transition recommender system usable in periods of massive disruptions (such as COVID-19). Third, he approached questions such as “Why did X become popular, but not Y?” and “How can problematic content be detected based solely on how it spreads?” with implications in detecting the spread of conspiracy theories and disinformation campaigns. Finally, he linked social media predicted personality profiles with worker occupations, applicable in building personalising career recommendations.

Marian-Andrei's research receives funding from selective funders such as Facebook Research and Defence Science and Technology (DST). In addition, he publishes in the most selective venues, such as the PNAS, PLOS ONE, PLOS Computations Biology, WWW, NeurIPS, IJCAI, and CIKM. As a result, his work has received significant media attention—including [Bloomberg Business Week](https://www.bloomberg.com/news/features/2020-02-12/the-best-way-to-change-your-job-focus-on-your-personality), [Nature Index](https://www.natureindex.com/news-blog/scientists-are-curious-and-idealistic-but-not-very-agreeable-compared-to-other-professions), [BBC](https://www.bbc.com/worklife/article/20200123-how-your-twitter-feed-could-help-find-your-dream-job), and [World Economic Forum](https://www.weforum.org/agenda/2021/05/we-spent-six-years-scouring-billions-of-links-and-found-the-web-is-both-expanding-and-shrinking/).

Marian-Andrei disseminates his research to the broader public by regularly contributing to [The Conversation](https://theconversation.com/profiles/marian-andrei-rizoiu-850922). In addition, he also leverages his research to real societal impact by, for examples, serving as an expert for the NSW government's Defamation Law Reform or providing evidence for the Australian Federal Senate inquiry into media diversity. See more at [www.rizoiu.eu](http://www.rizoiu.eu/).

### **Previous positions (in reverse chronological order):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Position** | **Level** | **Date from – to** | **Employer** | **FTE** |
| Visiting Professor, Jean Monnet University | - | March 2019 – April 2019 | Jean Monnet University, Saint-Etienne, France | 1.0 |
| Research Fellow in Computer science | Research Fellow (level B) | March 2016 – January 2019 | College of Engineering and Computer Science, Australian National University | 1.0 |
| Research Scientist in Machine Learning | Research Scientist | May 2014 – March 2016 | Optimisation Research Group, National ICT Australia (NICTA) | 1.0 |
| Postdoctoral Fellow | Research Fellow | July 2013 – May 2014 | ERIC laboratory, Lumière University Lyon, France | 1.0 |
| Teaching assistant | Teaching assistant | Sept 2012 – June 2013 | ERIC laboratory, Lumière University Lyon, France | 0.5 |
| Teaching assistant | Teaching assistant | Sept 2009 – Aug 2012 | ERIC laboratory, Lumière University Lyon, France | 0.25 |

### **Education and qualifications:**

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| --- | --- | --- |
| **Qualification** | **Institution / Organisation** | **Date of Award** |
| Degree of Doctor of Philosophy in Computer Science | Lumière University Lyon, France | 23 June 2013 |
| Degree of Master of Science in Data Mining and Knowledge Engineering | University of Nantes, France | Sept 2009 |
| Degree of Engineering in Systems and Computer Engineering | Polytechnic University of Bucharest, Romania | Sept 2009 |

### **Awards and prizes:**

|  |  |  |
| --- | --- | --- |
| **Award** | **Institution / Organisation** | **Date of Award** |
| PitchFest award for implementable disinformation prototype | NSW Smart Sensing Network & Klarrio Ltd. | 11/2020 |
| [CNRS IDEXLYON](https://anr.fr/ProjetIA-16-IDEX-0005) award for research excellence (French National Research Agency, project ANR-16-IDEX-0005). | French National Centre for Scientific Research (CNRS), Saint-Etiènne, France | 03/2019 |
| Travel Awards – to travel to WWW’18 | ANU Early Career Researchers grant scheme | 04/2018 |
| Travel Awards – to travel to ECML-PKDD’15 | ANU Early Career Researchers grant scheme | 06/2015 |
| NVIDIA Titan Gpu | NVIDIA GPU Grant Program | 01/2015 |
| Postgraduate travel grant | Rhône-Alpes local government | 05/2013 |
| Best student paper award **@**ICTAI | IEEE 24th International Conference on Tools with Artificial Intelligence, Athens, Greece | 11/2012 |
| ERASMUS International student exchange award | European Erasmus exchange program – competitive scheme | 06/2009 |

### **Teaching and Learning experience**

### SUMMARY OF SIGNIFICANT PERSONAL ACHIEVEMENTS IN EDUCATION

* **Breadth and quality of teaching.** I hold a pedagogical degree in higher education and I have a teaching experience of over 10 years. I have taught in four countries (Romania, France. Ukraine and Australia), and I have delivered more than 650 hours of lectures and tutoring for Undergraduates, Masters and Honours and I lectured in international excellence degree programs, such as the [European Master of Excellence in Machine Learning and Knowledge Discovery](http://www.em-dmkm.eu/) and the [Franco-Ukrainian Master of Business Intelligence and Statistics for Management](http://www.univ-lyon2.fr/formation/masters-1/master-1-informatique-decisionnelle-et-statistique-pour-le-management-idsm--446187.kjsp) (cooperation between the University Lumiere Lyon and the University of Kharkov, Ukraine).
* **Supervision completion.** More than 30 coursework Bachelors and Masters students
* **Student evaluation**. During my time at ANU, I consistently obtained higher than school average evaluations in the ANU’s official Student Experience of Learning and Teaching.
* **Diverse teaching.** I taught a wide range of CS subjects (Programming, Calculus, Networking, Algorithms Design), of Machine Learning and Data Mining subjects (association rules mining, decision trees, clustering, symbolic learning, ensemble methods) and Social Media Analysis. This documents details the complete list of these courses.

### COURSES AND UNITS DEVELOPMENT

**At Australian National University (2016-2019)** convenedthe course of Document Analysis, which is aimed at third year Bachelors and Masters students. I reconstructed the Social Media Analysis section using elements of the innovative blended learning approach: starting from a real social network dataset, the students are guided through social network construction and analysis. Examples and todos follow each other in a natural order, all into a Jupyter Notebook. My efforts received an excellent student feedback in SELT – ANU’s official student feedback. Here below are several such samples:

*“Marian was amazing and probably the best COMP lecturer I've had in ages,”*

*“Engaging and entertaining. Simplifies a lot of complex concepts with ease.”*

*“Excellent lecturer skill, the lectures are well-paced and funny in general. Though have accents, but the speaking is at proper speed and is easily understandable.”*

*“Bloke loves his social media, enthusiasm”*

### Course-based degree supervisions

|  |  |
| --- | --- |
| 2020: | **Directed Study 1** – Graph modelling approaches for motorway traffic flow prediction, Bachelor's equivalent, Zac Papachatgis |
| **Industry Study 2** – Open Banking Implementation, developing APIs for the Future of Banking, Bachelor's equivalent, Mitchell Fitzsimmons |
| 2012 – 2013: | **Case Study (Masters European Erasmus Mundus DMKM)**  Improve and optimise a topic extraction engine, from a corpus of texts of discussion forums. |
| **Research Initiation (Masters Computer Science)**  Improving the visualisation of online social networks, extracted from discussion web forums. |
| **Academic Tutor for student professional internship**  After 3 semesters of coursework, student did a one-month internships in industry (in banks, insurance companies or software development enterprises). |
| 2011 – 2012: | **Case Study (Masters European Erasmus Mundus DMKM)**  Develop a visualisation tool for online social networks, extracted from discussion web forums. |
| 2010 – 2011: | **Case Study (Masters European Erasmus Mundus DMKM)**  Improve an article retrieving platform from online media journals, develop parsers, creation of a data warehouse and textual topic extraction. |
| **Research Initiation (Masters Computer Science)**  Develop a temporal visualisation tool for textual topics, extracted from online discussion forums. |
| **Academic Tutor for student professional internship**  After 3 semesters of coursework, student did a one-month internships in industry (in banks, insurance companies or software development enterprises) |
| 2009 – 2010: | **Research Initiation (Masters Computer Science)**  Develop an article retrieving platform from online media journals, develop parsers, creation of a data warehouse and textual topic extraction. |

### TAUGHT SUBJECTS

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Sem | Course name (type and level) and brief description | *vol* |
| 2020:  Lecturer @UTS | Sem. 2 | ***Series of guest lectures* CSS1 student mentoring, course code: 41078 (50 students, undergrad)** Detecting organised opinion manipulation, detecting bots and trolls. | *8h* |
| Sem. 1 | ***Guest lecture* Introduction to Data Analytics, course code: 31250 (50 students, undergrad)** Examples of analysis of real-world social media data. | *2h* |
| ***Invited Lecture* Statistical Machine Learning (200 Honours and Masters students, ANU College of Engineering)** Applied data analytics and designing predictive experiments. | *3h* |
| 2019:  Lecturer @UTS | Sem. 2 | ***Invited Lecture* Computational Propaganda (20 postgrad students, ANU National Security College)** Detecting organised opinion manipulation, detecting bots and trolls. | *3h* |
| Sem. 1 | ***Invited Lecturer* Research Methods Qualitative module (Honours and PhD students, ANU College of Engineering)** Apply quantitative, data science and machine learning for inferential problems. | *3h* |
| 2018:  Lecturer @ANU | Sem. 2 | **Convener Document Analysis (3rd year Undergraduate and Honours)** Linear classifiers, clustering, graph theory, visualisation tools, centrality and community measures, sentiment analysis. | *40h* |
| Sem. 1 | **Research Methods Qualitative module (Honours and PhD students)** Apply quantitative, data science and machine learning for inferential problems. | *20h* |
| 2017:  Research Fellow @ANU | Sem. 2 | **Convener Document Analysis (3rd year Undergraduate and Honours)** Linear classifiers, clustering, graph theory, visualisation tools, centrality and community measures, sentiment analysis. | *40h* |
| 2016:  Research Fellow @ANU | Sem. 2 | **Convener Document Analysis (3rd year Undergraduate and Honours)** Linear classifiers, clustering, graph theory, visualisation tools, centrality and community measures, sentiment analysis. | *40h* |
| Sem. 1 | **Advanced Databases and Data Mining (3rd year Undergratuate)**  Concepts of data warehousing and OLAP techniques, fundamental data mining algorithms. | *30h* |
| 2015:  adjunct @ANU | Sem. 2 | **Document Analysis (3rd year Undergraduate and Honnors)** Notions of classification and clustering, graph theory, visualization tools, centrality and community measures, sentiment analysis. | *20h* |
| 2013 – 2014:  Teaching assistant  University  Lyon 2 | Sem. 1 | **Software Methodologies (Tutoring Masters Erasmus Mundus DMKM)** Development of computer systems, complex systems. | *15h* |
| **Numerical Machine Learning (Lecturing Master Erasmus Mundus DMKM)** Association rules mining and ensemble methods. | *3h* |
| **Object Oriented Programming (Lecturing&Tutoring Masters IDSM Kharkov)**  Introduction in object-oriented programming, Java GUIs, APIs. | *25h* |
| Sem. 2 | **Data Mining (Tutoring Masters IDSM Kharkov)** Data analysis in R: processing and data cleaning, statistical analysis, data mining. | *14h* |
| 2012 – 2013:  Teaching assistant  University  Lyon 2 | Sem. 1 | **Software Methodologies (Tutoring Masters Erasmus Mundus DMKM)** Development of computer systems, complex systems. | *15h* |
| **Object Oriented Programming (Lecturing&Tutoring Masters Computer Science)**  Introduction in object-oriented programming, Java GUIs, APIs. | *25h* |
| **Scientific Calculation (Tutoring undergraduates)** Programming in Octave, statistical and graphical calculations, time series analysis. | *14h* |
| **Numerical Machine Learning ( Lecturing Master Erasmus Mundus DMKM)** Association rules mining and ensemble methods. | *3h* |
| Sem. 2 | **UNIX Operating Systems et C programming language (Lecturing&Tutoring undergraduates IDS)** Usage and administration of UNIX systems, Bash programming, C language programming. | *25h* |
| **Symbolic learning (Tutoring Master Erasmus Mundus DMKM)**  Introduction to artificial intelligence, machine learning, Formal Concept Analysis, Decision Trees, Association Rules. | *15h* |
| **Object Oriented Programming (Lecturing&Tutoring Masters IDSM Kharkov)**  Introduction in object-oriented programming, Java GUIs, APIs. | *25h* |
| 2011 – 2012:  Teaching assistant  University  Lyon 2 | Sem. 1 | **Numerical Calculus (Lecturing&Tutoring undergraduates)**  Personalised functions and VBA macros, Excel visual interfaces. | *21h* |
| **Scientific Calculation (Tutoring undergraduates)** Programming in Octave, statistical and graphical calculations, time series analysis. | *14h* |
| **Numerical Machine Learning (Lecturing Master Erasmus Mundus DMKM)**  Association rules mining and ensemble methods. | *3h* |
| Sem. 2 | **Numerical Calculus (Lecturing&Tutoring undergraduates)**  Personalised functions and VBA macros, Excel visual interfaces. | *42h* |
| 2010 – 2011:  Teaching assistant  University  Lyon 2 | Sem. 1 | **Initiation in programming in Visual Basic (Tutoring undergrads)**  Notions of programming in Visual Basic, sort algorithms, data structures, graphical interfaces. | *21h* |
| **Object Oriented Programming (Tutoring Masters Computer Science)** Introduction in object-oriented programming, Java GUI, API | *6h* |
| Sem. 2 | **Numerical Calculus (Lecturing&Tutoring undergraduates)**  Personalised functions and VBA macros, Excel visual interfaces. | *11h* |
| **ACCESS Databases (Tutoring undergraduates IDEA)**  Introduction to databases, tables, queries, reports. | *28h* |
| 2009 – 2010:  Teaching assistant  University  Lyon 2 | Sem. 1 | **Initiation in programming in Visual Basic (Tutoring undergrads)**  Notions of programming in Visual Basic, sort algorithms, data structures, graphical interfaces. | *42h* |
| Sem. 2 | **Numerical Calculus (Lecturing&Tutoring undergraduates)**  Personalised functions and VBA macros, Excel visual interfaces. | *11h* |
| **ACCESS Databases (Tutoring undergraduates)**  Introduction to databases, tables, queries, reports. | *14h* |
| 2008 – 2009 :  TA  Polytechnic  Bucharest | Sem. 1 | **Communication Networks (Tutoring Engineering undergraduates)** Notions of networking, communication protocols (TCP, IP, SSH), routing protocols (OSPF, RIP, IS-IS), local networks. | *56h* |
| 2007 – 2008 :  TA  Polytechnic  Bucharest | Sem. 2 | **Constructing and implementing algorithms (Tutoring Engineering undergraduates)** Initiation to the construction of algorithms, data structures, graph structures and algorithms, spatial and temporal complexity calculation. | *56h* |
|  |  | **Total:** | *653h* |
|  |  |  |  |
| Other courses capable to teach: | | Operating System, Programming Languages (C/C++, Java, Python, C# *etc.*), Algorithms, Data Structures, Assembler, Databases, Object Oriented Programming, Parallel Programming, Operating Systems Programming, Web Programming, Data Mining / Machine Learning. | |

### **Research and Innovation experience**

### Fundamental research impact

My significant contributions to the fundamental behavioural data science and web research fields focus on (i) **analysing social media dynamics using epidemic-inspired models**; (ii) **modelling of diﬀusion cascades and video popularity**; (iii) **labour markets dynamics and career transition recommendations.**

**Analysing social media dynamics using epidemic-inspired models** (15 published papers, 202 total citations). My recent work [9] proposes a mixture model which accounts jointly for all diﬀusions initiated by a single user (or referring to a single news article). In doing so, the obtained model described the user (or the news article) based on how it is discussed on social media. This result is significant as **it allows detecting disinformation without analysing the content**. Another major contribution is mathematically linking the two main classes of approaches for online information diﬀusion (epidemic models and Hawkes point processes) previously considered independent [11][19]. This contribution is significant because it **links two classes of models and because it paves the way to applying tools developed for one approach to the other**. This research was published at the top publication outlets in Data Science, Web Research and Machine Learning (WWW, CIKM, WSDM, PLOS Computational Biology, NeurIPS and ICML), in collaborations with epidemiologists (Imperial College of London, UK), machine learners (Data61 CSIRO; ANU; KAIST, Korea), social scientists (QUT; ANU) and data scientists (CNRS, France; ANU). The work was funded by a Facebook grant, an internal UTS FEIT cross-faculty grant and a National Security College’s Green policy grant.

**A point process-based modelling of diﬀusion cascades and video popularity** (12 published papers, 390 total citations). My work on this topic is a major contribution to popularity modelling and prediction. It contributes to the development of theoretical point process modelling of how information cascades occur in online media. The model is parametric (i.e., its parameter values are directly interpretable) and it embeds social factors, such as the local user influence, social memory and content appeal. The results were significant: **the resulted models are the current state-of-the-art in predicting the total size of information bursts in Twitter [25] and in forecasting future popularity of online videos on Youtube [21][24]**. Subsequent work uses Bayesian learning for adapting the shape of the Hawkes kernels to data [10][12][16]. However, the practical applications of the models are even more significant: using the outputs of our proposed HIP model [24], we can build a two-dimensional visualisation of the viral potential of items (that is to say, what is the capacity of the online item to become highly popular, given enough attention), which allows investigating questions such as "Why did X become popular, but not Y?". **The implications in advertising and marketing are major since our model allows identifying individuals for which publicity would be most eﬀective, and it singles out the unpromotable content**. Furthermore, we have shown [23] that the success of a promotion campaign (the popularity boost which can be obtained given a promotion budget) can be accurately forecasted in advance and cost-eﬀective promotion schedules can be constructed. This work was published in highly selective publication outlets, such as PLOS ONE, WWW, WSDM, ICWSM, CIKM, in collaboration with optimisation researchers (Georgia Tech, US; Max Plank, Germany; Uni Toronto, Canada), economists (UNSW) and evolutionary biologists (UNSW). This work was funded by a US Air Force grant (AOARD), a SIEF Cat.1 grant and an internal UTS FEIT cross-faculty grant.

**Labour markets dynamics and career transition recommendations** (5 published papers, 32 total citations).I made significant progress in data-driven career recommendation. People are forced to change jobs as new technologies automate labour, production is moved abroad, and economic crises unfold. However, successfully transitioning between jobs requires leveraging current skills and acquiring others, which can falter if the skills gap is too large. My recent work in [3][13] proposes a novel method to measure the similarities between sets of skills using real-time job advertisements data. The outcome is a **job recommender system to help workers identify job transition pathways personalised to their skills set, and it is currently implemented in a UTS2027 strategic project.** Furthermore, my research published in the prestigious Proceedings of the National Academy of Sciences (PNAS) [41] shows that occupations of individuals are closely linked to their personality profiles quantifies from social media data. This opens the way to personalising the career recommendations in the transitions recommender system. This work was published in highly selective publication outlets, such as PNAS, Journalism and BigData, in collaboration with economists (UTS, UNSW), psychologists (Uni Melbourne) and journalists (UTS). This work was supported by my Cat.1 grant (SIEF) and strategic internal UTS2027 funding.

### PUBLICATION LIST

* (as of 17 May 2021) I have published 44 publications (31 fully refereed conference papers, 10 refereed journal articles, 2 peer-reviewed book chapters and 1 patent).
* I have a lifetime H-index of 14; i10-index of 20; 799 citations (Google Scholar, 09/07/21)
* I have published in **the most selective venues, such as the Proceedings of the National Academy of Sciences (PNAS), PLOS ONE, PLOS Computational Biology, The Web Conf.**

**Chapters**

1. **Rizoiu, M. A.,** Lee, Y., Mishra, S., & Xie, L. (2017). A Tutorial on Hawkes Processes for Events in Social Media. In S. -F. Chang (Ed.), *Frontiers of Multimedia Research* (pp. 191-218). doi:[10.1145/3122865.3122874](http://doi.org/10.1145/3122865.3122874)
2. **Rizoiu, M. A.**, & Velcin, J. (2011). Topic extraction for ontology learning. In *Ontology Learning and Knowledge Discovery Using the Web: Challenges and Recent Advances* (pp. 38-60). doi:[10.4018/978-1-60960-625-1.ch003](http://doi.org/10.4018/978-1-60960-625-1.ch003)

**Conferences**

1. Largeron, C., Mardale, A., & **Rizoiu, M. A.** (2021). Linking the Dynamics of User Stance to the Structure of Online Discussions. Doi:[10.1007/978-3-030-74251-5\_22](http://doi.org/10.1007/978-3-030-74251-5_22)
2. Dawson, N., **Rizoiu, M. A.**, Johnston, B., & Williams, M. -A. (2021). Predicting Skill Shortages in Labor Markets: A Machine Learning Approach. In *2020 IEEE International Conference on Big Data (Big Data)*. virtual: IEEE. doi:[10.1109/bigdata50022.2020.9377773](http://doi.org/10.1109/bigdata50022.2020.9377773)
3. Ram, R., Kong, Q., & **Rizoiu, M. A.** (2021). Birdspotter: A Tool for Analysing and Labeling Twitter Users. In *Proceedings of the 14th ACM International Conference on Web Search and Data Mining*. online: ACM. Doi:[10.1145/3437963.3441695](http://doi.org/10.1145/3437963.3441695)
4. Mihaita, A. -S., Papachatgis, Z., & **Rizoiu, M. A.** (2020). Graph modelling approaches for motorway traffic flow prediction. In *23rd IEEE International Conference on Intelligent Transportation Systems (ITSC'20) (pp. 1 – 8). Rhodes, Greece (2020)*. Piscataway, USA: IEEE. doi:[10.1109/ITSC45102.2020.9294744](http://doi.org/10.1109/ITSC45102.2020.9294744)
5. Kong, Q., Ram, R., & **Rizoiu, M. A.** (2020). Evently: Modeling and Analyzing Reshare Cascades with Hawkes Processes. Doi:[10.1145/3437963.3441708](http://doi.org/10.1145/3437963.3441708)
6. Wu, S., **Rizoiu, M. A.**, & Xie, L. (2020). Variation across Scales: Measurement Fidelity under Twitter Data Sampling. In *Proceedings of the Fourteenth International AAAI Conference on Web and Social Media* Vol. 14 (pp. 715-725). USA: AAAI. Retrieved from <https://ojs.aaai.org/index.php/ICWSM/article/view/7337>
7. Kong, Q., **Rizoiu, M. A.**, & Xie, L. (2020). Describing and Predicting Online Items with Reshare Cascades via Dual Mixture Self-exciting Processes. In *International Conference on Information and Knowledge Management, Proceedings* (pp. 645-654). doi:[10.1145/3340531.3411861](http://doi.org/10.1145/3340531.3411861)
8. Zhang, R., Walder, C. J., Bonilla, E. V., **Rizoiu, M. A.**, & Xie, L. (2020). Quantile Propagation for Wasserstein-Approximate Gaussian Processes. In H. Larochelle (Ed.), *Advances in Neural Information Processing Systems 33 (NeurIPS 2020)*. Virtual Conference. Retrieved from <https://proceedings.neurips.cc/>
9. Kong, Q., **Rizoiu, M. A.**, & Xie, L. (2020). Modeling Information Cascades with Self-exciting Processes via Generalized Epidemic Models. In *PROCEEDINGS OF THE 13TH INTERNATIONAL CONFERENCE ON WEB SEARCH AND DATA MINING (WSDM '20)* (pp. 286-294). Houston, TX: ASSOC COMPUTING MACHINERY. Doi:[10.1145/3336191.3371](http://doi.org/10.1145/3336191.3371821)
10. Zhang, R., Walder, C., & **Rizoiu, M. A.** (2020). Variational Inference for Sparse Gaussian Process Modulated Hawkes Process. In *Proceedings of the AAAI Conference on Artificial Intelligence* Vol. 34 (pp. 6803-6810). New York Hilton Midtown, New York: Association for the Advancement of Artificial Intelligence (AAAI). doi:[10.1609/aaai.v34i04.6160](http://doi.org/10.1609/aaai.v34i04.6160)
11. Dawson, N. J., **Rizoiu, M. A.**, Johnston, B., & Williams, M. -A. (2020). Adaptively selecting occupations to detect skill shortages from online job ads. In *IEEE International Conference on Big Data (IEEE Big Data 2019)* (pp. 1-7). Los Angeles, CA, USA.
12. Mihaita, A. -S., Li, H., He, Z., & **Rizoiu, M. A.** (2019). Motorway Traffic Flow Prediction using Advanced Deep Learning. In *2019 IEEE Intelligent Transportation Systems Conference (ITSC)* (pp. 1683-1690). IEEE. doi:[10.1109/ITSC.2019.8916852](http://doi.org/10.1109/ITSC.2019.8916852)
13. Ram, R., & **Rizoiu, M. A.** (2019). A social science-grounded approach for quantifying online social influence. In *Australian Social Network Analysis Conference (ASNAC’19)* (pp. 2).
14. Zhang, R., Walder, C., **Rizoiu, M. A.**, & Xie, L. (2019). Efficient Non-parametric Bayesian Hawkes Processes. In *Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence* (pp. 4299-4305). USA: International Joint Conferences on Artificial Intelligence Organization. doi:[10.24963/ijcai.2019/597](http://doi.org/10.24963/ijcai.2019/597)
15. Mihăiţă, A. S., Liu, Z., **Rizoiu, M. A.**, & Cai, C. (2019). Arterial incident duration prediction using a bi-level framework of extreme gradient-tree boosting. In *ITS World Congress 2019 (ITSWC2019), Singapore*.
16. Kong, Q., **Rizoiu, M. A.**, Wu, S., & Xie, L. (2018). Will This Video Go Viral: Explaining and Predicting the Popularity of Youtube Videos. In *The Web Conference 2018 - Companion of the World Wide Web Conference, WWW 2018* (pp. 175-178). doi:[10.1145/3184558.3186972](http://doi.org/10.1145/3184558.3186972)
17. **Rizoiu, M. A.**, Mishra, S., Kong, Q., Carman, M., & Xie, L. (2018). SIR-Hawkes: Linking Epidemic Models and Hawkes Processes to Model Diffusions in Finite Populations. In *WEB CONFERENCE 2018: PROCEEDINGS OF THE WORLD WIDE WEB CONFERENCE (WWW2018)* (pp. 419-428). Lyon, FRANCE: ASSOC COMPUTING MACHINERY. doi:[10.1145/3178876.3186108](http://doi.org/10.1145/3178876.3186108)
18. **Rizoiu, M. A.**, Graham, T., Zhang, R., Zhang, Y., Ackland, R., & Xie, L. (2018). #DebateNight: The role and influence of socialbots on twitter during the first 2016 US presidential debate. In *12th International AAAI Conference on Web and Social Media, ICWSM 2018* (pp. 300-309). USA..
19. Wu, S., **Rizoiu, M. A.**, & Xie, L. (2018). Beyond views: Measuring and predicting engagement in online videos. In *12th International AAAI Conference on Web and Social Media, ICWSM 2018* (pp. 434-443). USA: AAAI.
20. Mishra, S., **Rizoiu, M. A.**, & Xie, L. (2018). Modeling popularity in asynchronous social media streams with recurrent neural networks. In *12th International AAAI Conference on Web and Social Media, ICWSM 2018* (pp. 201-210). USA: AAAI.
21. **Rizoiu, M. A.**, & Xie, L. (2017). Online popularity under promotion: Viral potential, forecasting, and the economics of time. In *Proceedings of the 11th International Conference on Web and Social Media, ICWSM 2017* (pp. 182-191).
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**Internet publications**

1. McCarthy, P., & **Rizoiu, M. A.** (2021). *We spent six years scouring billions of links, and found the web is both expanding and shrinking*. The Conversation. Retrieved from <https://theconversation.com/>
2. Dawson, N., & **Rizoiu, M. A.** (2020). *Coronavirus infecting Australian jobs: vacancy rates down since early February*. The Conversation. Retrieved from <https://theconversation.com/>
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**Journal articles**

1. Dawson, N., Williams, M.-A., & **Rizoiu, M. A.** (2021). Skill-driven Recommendations for Job Transition Pathways. *PLOS ONE*. <http://arxiv.org/abs/2011.11801>
2. McCarthy, P. X., Gong, X., Eghbal, S., Falster, D. S., & **Rizoiu, M. A.** (2021). Evolution of diversity and dominance of companies in online activity.. *PloS one*, *16*(4), e0249993. doi:[10.1371/journal.pone.0249993](http://doi.org/10.1371/journal.pone.0249993)
3. Unwin, H. J. T., Routledge, I., Flaxman, S., **Rizoiu, M. A.**, Lai, S., Cohen, J., . . . Bhatt, S. (2021). Using Hawkes Processes to model imported and local malaria cases in near-elimination settings. *PLOS Computational Biology*. doi:[10.1371/journal.pcbi.1008830](http://doi.org/10.1371/journal.pcbi.1008830)
4. Dawson, N., Molitorisz, S., **Rizoiu, M. A.**, & Fray, P. (2021). Layoffs, Inequity and COVID-19: A Longitudinal Study of the Journalism Jobs Crisis in Australia from 2012 to 2020. *Journalism*. Doi:[10.1177/1464884921996286](http://doi.org/10.1177/1464884921996286)
5. 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 of the United States of America*, *116*(52), 26459-26464. doi:[10.1073/pnas.1917942116](http://doi.org/10.1073/pnas.1917942116)
6. Wu, S., **Rizoiu, M. A.**, & Xie, L. (2019). Estimating attention flow in online video networks. *Proceedings of the ACM on Human-Computer Interaction*, *3*(CSCW). Doi:[10.1145/3359285](http://doi.org/10.1145/3359285)
7. Kim, D., Graham, T., Wan, Z., & **Rizoiu, M. A.** (2019). Analysing user identity via time-sensitive semantic edit distance (t-SED): a case study of Russian trolls on Twitter. *Journal of Computational Social Science*, *2*(2), 331-351. doi:[10.1007/s42001-019-00051-x](http://doi.org/10.1007/s42001-019-00051-x)
8. **Rizoiu, M. A.**, Velcin, J., & Lallich, S. (2014). How to Use Temporal-Driven Constrained Clustering to Detect Typical Evolutions. *INTERNATIONAL JOURNAL ON ARTIFICIAL INTELLIGENCE TOOLS*, *23*(4), 26 pages. doi:[10.1142/S0218213014600136](http://doi.org/10.1142/S0218213014600136)
9. **Rizoiu, M. A.**, Velcin, J., & Lallich, S. (2015). Semantic-enriched visual vocabulary construction in a weakly supervised context. *INTELLIGENT DATA ANALYSIS*, *19*(1), 161-185. doi:[10.3233/IDA-140702](http://doi.org/10.3233/IDA-140702)
10. **Rizoiu, M. A.**, Velcin, J., & Lallich, S. (2013). Unsupervised feature construction for improving data representation and semantics. *JOURNAL OF INTELLIGENT INFORMATION SYSTEMS*, *40*(3), 501-527. doi:[10.1007/s10844-013-0235-x](http://doi.org/10.1007/s10844-013-0235-x)
11. Muşat, C., Trǎuşan-Matu, S., Velcin, J., & **Rizoiu, M. A.** (2012). Automatic extraction of conceptual labels from topic models. *UPB Scientific Bulletin, Series C: Electrical Engineering*, *74*(2), 57-68.

**Patents**

1. McCarthy, P., Gong, E., Kern, M., & **Rizoiu, M. A.** (2021). *2021900174, METHODS AND SYSTEMS FOR RECOMMENDING JOBS*.

**Working Papers**

1. **Rizoiu, M. A.**, Soen, A., Li, S., Dong, L., Menon, A. K., & Xie, L. (2021). *Interval-censored Hawkes processes*.
2. Dawson, N., **Rizoiu, M. A.**, & Williams, M. -A. (2020). *Job Transitions in a Time of Automation and Labor Market Crises*.
3. Nurek, M., Michalski, R., & **Rizoiu, M. A.** (2020). *Hawkes-modeled telecommunication patterns reveal relationship dynamics and personality traits*.
4. Mihaita, A. -S., Li, H., & **Rizoiu, M. A.** (2020). *Traffic congestion anomaly detection and prediction using deep learning*.
5. **Rizoiu, M. A.**, Wang, T., Ferraro, G., & Suominen, H. (2019). *Transfer Learning for Hate Speech Detection in Social Media*.
6. **Rizoiu, M. A.**, Guille, A., & Velcin, J. (2015). *CommentWatcher: An Open Source Web-based platform for analysing discussions on web forums.*
7. Kong, Q., Booth, E., Bailo, F., Johns, A., & **Rizoiu, M. A.** (2021). *Mapping Online Problematic Content using Ethnographic and Qualitative Analysis augmented with Human-in-the-loop Machine Learning*.

### RESEARCH FUNDING (SECURED)

|  |  |
| --- | --- |
| 2021: | UTS FEIT Cross-Faculty Scheme, “**The dynamics of disinformation across traditional and social media**”, $20K, Lead-CI.   * **CI team:** **M.A. Rizoiu** (UTS), A. Johns (UTS), F. Bailo (UTS), A. Kruger (UTS), D. Wilding, M. Attard. * **Summary:** Understand the dynamic interaction between the traditional and social media ecosystems that results in the flow of disinformation and problematic content. * **Role:** I am the lead-CI of this project: I constructed the idea, built the team, lead the development of the proposal and am managing the delivery. Within the project, I supervise the engineering team responsible with building the data gathering and annotation prototype. |
| 2021 – 2022: | Defence Science and Technology (DST), Modelling Complex Warfare grants (MCW) Modelling in the Gray Zone (MGZ) stream. **“Forensic analysis and real-time detection of dis-information campaigns”**, $100K, lead-CI.   * **CI team: M.A. Rizoiu** (UTS), D. Kernot (DST) * **Summary:** Real-time detection of disinformation campaigns using multi-faceted social media analysis. * **Role:** I am the sole academic CI on this project. I drive the research agenda, supervise the postdoc and two students involved in the project, and I am responsible for the deliverables to DST. |
| 2020-2021: | Facebook Content Policy Research Grants, **“Using computational modelling of user behaviour and machine learning to counter the diffusion of hate speech across social media”**, $86k, CI.   * CI team: A. Johns (UTS), F. Bailo (UTS), **M.A. Rizoiu** (UTS). * **Summary:** Use ethnographic methods to identify and monitor a number of persona associated with hate speech diffusion targeting vulnerable populations. * **Role**: I am responsible with the construction of the Active Learning model for detecting problematic speech; I supervise the Research Assistant implementing the model; I lead the computational papers and deliverables. |
| 2019 – 2020: | National Security College’s Green policy grants, “**Tracking Disinformation Campaigns Across Terrains: Implications for Policy**”, $50K, CI.   * **CI team:** J. Hunt (ANU), **M.A. Rizoiu** (UTS) * **Summary:** Quantify the scale of the problem of disinformation in order to co‐design responses with policy partners. * **Role**: I lead the research agenda, I recruited two Honours students to help with the research, I manage communication with the research team, I lead the writing of the paper and most deliverables. |
| 2019 – 2020: | UTS FEIT Cross-Faculty Scheme, “**SocialSense: Making sense of the opinions and interactions of online users**”, $20K, CI.   * **CI team:** F. Bailo (UTS), A. Johns (UTS), **M.A. Rizoiu** (UTS) * **Summary:** Study the diffusion and polarization of opinions online, mixing an ethnographic approach with computational modelling of behaviour. * **Role**: I lead the development of the diffusion models across platform boundaries; I supervise the research assistant who implements the models and the student helping with the research; I lead the writing of the computer science paper and deliverables. |
| 2019: | Science and Industry Endowment Fund, “Adaptive skills taxonomy to enable labour market agility”, $350K, CI.   * **CI team:** C. Mason (Data61 CSIRO), **M.A. Rizoiu** (UTS), A. Krumpholz (Data61), A. Duenser (Data61), A. Reeson (Data61), C. Chen (Data61), G. Walker (Data61), K. Trinh (Data61), R. Sparks (Data61), S. Wan, (Data61) Y. Zhao (Data61) * **Summary:** Understand the change of demand and supply of skills in a timely and efficient manner in order to provide information to inform employment decisions. * **Role**: I lead the development of copula-based methods to link posting activity between different geographical and temporal regions; I supervise the postdoctoral fellow developing the stochastic tools; I lead the writing of the report and the deliverable for the modelling section of the project. |
| 2019 | Industrial consulting with a merger/acquisition. $10.5k, sole-CI.   * **CI team: M.A. Rizoiu** (UTS) * **Summary:** The industrial partner wants to acquire a Singapore start-up which deployed Machine Learning techniques to semi-automatise the processes. The due diligence included the evaluation of the techniques deployed. * **Role**: I read technical documentation, I interviewed the founders of the start-up, I evaluated the technology, I wrote a lengthy report about the findings, and delivered an in-person Q& A session with the acquirer. |
| 2018 | ANU Social Science Cross-College Grants, **“Advanced tools and methods for analysing the role and influence of bots in social media”**, $50K, Lead-CI.   * **CI team: M.A. Rizoiu** (UTS), T. Graham (QUT), R. Ackland (ANU), L. Xie (ANU), D. Halpin (ANU), J. Davis (ANU). * **Summary:** The impact of automation in the form of socialbots on deliberative democracy – how socialbots hijack the public discourse. * **Role**: I lead the development of the grant proposal, developed the idea, managed the project (including finances). I lead the Computer Science team developing socialbots detection algorithms; I delivered the final report. |
| 2018 | ANU Social Science Cross-College Grants, **“Identify Hate Speech and Predict Mass Atrocities”**, $30K, Lead-CI.   * **CI team:** **M.A. Rizoiu** (UTS), B. Goldsmith (ANU), H. Suominen (ANU), G. Ferraro (Data61 CSIRO), S. Chernykh (ANU), K. Dowding (ANU), C. Miller (ANU) * **Summary:** Can “hate speech” be reliably measured to predict political violence? * **Role**: I lead the development of the grant proposal, developed the idea, managed the project (including finances). I lead the Computer Science team developing hate speech detection algorithms; I delivered the final report. |

### **RESEARCH FUNDING (SUBMITTED, IN REVIEW)**

1. **ARC Discovery Project** – “Inoculating and Protecting communities against disinfodemics”, $571K  
   **CI team:** A. Johns (UTS), **M.A. Rizoiu** (UTS), F. Bailo (UTS), J. Macnamara (UTS)
2. **National Intelligence and Security Discovery Research Grants (NISDRG)** – “Understanding the dynamics of and motivations for sharing disinformation”, $598K  
   **CI team:** P.Henman (UQ), T. Graham (QUT), J Rimer (UQ), **M.A. Rizoiu** (UTS).
3. **OPUS ‘20** – “Streaming social data”, $313K  
   **CI team:** R. Michalsky (Wrocław University of Science and Technology), **M.A. Rizoiu** (UTS)

### HDR STUDENT SUPERVISION

1. **Currently supervising** 7 PhD students (5 as primary supervisor, 2 as co-supervisor) and 4 Honours students (primary supervisor).
2. I have **successfully supervised and graduated** more than 23 research students and staff – 3 PhD students (co-supervisor), 10 Honours students (primary supervisor), 1 postdoc, 4 Research Assistants, 1 visiting postgrad student and 4 summer scholar students.

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| **Details of research degree students who completed their PhDs** | | | **Completion** |
|  |  | Joint supervisor, PhD thesis – Changing Labour Market Dynamics in Australia: Skill Shortages, Job Transitions, and Artificial Intelligence Technology Adoption, Nikolas Dawson | 2021 |
|  |  | Joint supervisor, PhD thesis – Measuring Collective Attention in Online Content: Sampling, Engagement, and Network Effects, Siqi Wu | 2020 |
|  |  | Joint supervisor, PhD thesis – Linking Models for Collective Attention in Social Media, Swapnil Mishra | 2019 |
| **Details of research PhD students currently supervised** | | | **Start Date** |
|  |  | Lead supervisor, PhD thesis – Modelling Cross-Platform Influence in Partially-Observed Information Diffusions, Pio Calderon | 2021 |
|  |  | Lead supervisor, PhD thesis – Online discourse aggregation modelling via a market mechanism, Rohit Ram | 2020 |
|  |  | Lead supervisor, PhD thesis – Identifying bias through semantic relationship analysis, Dima Galat | 2020 |
|  |  | Joint supervisor, PhD thesis – Modelling traffic disruptions impact using machine learning and traffic simulation, Arthur Grigorev | 2020 |
|  |  | Joint supervisor, International PhD thesis – Linking communication patterns and psychological traits, Mateusz Nurek | 2019 |
|  |  | Lead supervisor, PhD thesis – Non-parametric Bayesian Estimation of Hawkes Triggering Kernels, Rui Zhang | 2018 |
|  |  | Lead supervisor, PhD thesis – Linking Epidemic Models and Self-exciting Processes for Online and Offline Diffusions, Quyu Kong | 2018 |
| **Details of research Honours and Masters students** | | | **Start Date** |
|  |  | Lead supervisor, Honours thesis – Disinformation in Australian Politics, Thomas Willingham | 2021 |
|  |  | Lead supervisor, Honours thesis – Opinion polarisation dynamics: how information exposure evolves stance towards contentious topics, Duy Khuu | 2021 |
|  |  | Lead supervisor, Honours thesis – Opinion polarisation dynamics: building a stance detector for opinion, Andrew Law | 2021 |
|  |  | Lead supervisor, Honours thesis – Transfer Learning for the Social Media Detection of Hate Speech, Frankie Yuan | 2021 |
|  |  | Lead supervisor, Honours thesis – Profiling information warfare in social media: forensic analysis of the 2019 Australian elections, Kriti Tripathi | 2020 |
|  |  | Lead supervisor, Honours thesis – Labour dynamics in the age automation: detecting emergent skills in labour markets from job ads description, Yaozhong Liu | 2020 |
|  |  | Joint supervisor, International Masters thesis – RNN-based approaches for polariation dynamics, Yogesh Kumar Pilli | 2020 |
|  |  | Lead supervisor, Honours thesis – Measuring Social Influence on Social Media with Temporal Point Processes, Rohit Ram | 2019 |
|  |  | Joint supervisor, International Masters thesis – Information Diffusion in Online Communities, Andrei Mardale | 2019 |
|  |  | Lead supervisor, Summer student – Traffic flow prediction, Haowen Li | 2019 |
|  |  | Lead supervisor, Honours thesis – A HIPPer approach to interval-censored Hawkes process, Shidi Li | 2019 |
|  |  | Lead supervisor, Summer student – The HIPPER approach to interval censored processes, Shidi Li | 2019 |
|  |  | Lead supervisor, Summer student – Deep Learning for incident prediction, Zongyang He | 2019 |
|  |  | Lead supervisor, Honours thesis – Temporal-aware semantic edit distance for Twitter troll detection, Zimin Wan | 2018 |
|  |  | Joint supervisor, Summer student – Traffic incident duration prediction, Zheyuan (David) Liu | 2018 |
|  |  | Lead supervisor, Honours thesis – The Bot Among Us: Disrupting Truth and Reason Through Online Social media, Yifei Zhang | 2018 |
|  |  | Lead supervisor, Honours thesis – Variational Bayesian Hawkes Processes, Rui Zhang | 2018 |
|  |  | Lead supervisor, Honours thesis – Modeling Information Diffusion in Social Network, Quyu Kong | 2017 |
|  |  | Lead supervisor, Visiting Postgrad – The psychometric profiles of Twitter users, Shubing Shan | 2017 |
|  |  | Lead supervisor, Honours thesis – The diversity of Online Environment, Sina Eghbal | 2017 |
|  |  | Lead supervisor, Honours thesis – Analyzing diffusion patterns in large social networks, Mingyuan Cui | 2015 |

### **Service and Engagement**

### Graduate examinations

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|  | Examination committee member, University of Technology Sydney, Australia, Hou W (lead-supervisor: Longbing Cao) | 2020 |

### Committees and selection panels

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|  | University of Technology Sydney – Postdoctoral researcher recruitment panel | 2021 |
|  | University of Technology Sydney – Postdoctoral research recruitment panel – Fostering Global Digital Citizenship project | 2019 |
|  | University of Technology Sydney – IRC148268 Postdoctoral researcher recruitment panel | 2019 |
|  | University of Technology Sydney – ARC postdoctoral researcher interview | 2019 |

### Professional Activity

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| **Reviewing / Refereeing** | | | |
|  |  | Area chair at the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases | 2021 |
|  |  | Network Science | 2021 |
|  |  | ACM Conference on Computer-Supported Cooperative Work and Social Computing | 2021 |
|  |  | Statistics and Computing | 2021 |
|  |  | Program Committee for The Web Conference 2021 | 2020 |
|  |  | Journal of Complex Networks | 2020 |
|  |  | Journal of Artificial Intelligence Research | 2020 |
|  |  | Biometrical Journal: journal of mathematical methods in biosciences | 2020 |
|  |  | ACM Transactions on Information Systems | 2020 |
|  |  | IEEE Conference on Decision and Control | 2020 |
|  |  | Research Methods in Medicine and Health Sciences | 2020 |
|  |  | ACM Transactions on Information Systems | 2020 |
|  |  | ACM Computing Surveys | 2020 |
|  |  | Program Committee of The Web Conference | 2019 |
|  |  | Workshop on Social Network Analysis in Applications | 2019 |
|  |  | EPJ Data Science | 2019 |
|  |  | European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases. | 2019 |
|  |  | ACM Transactions on the Web | 2019 |
|  |  | International AAAI Conference on Web and Social Media | 2019 |
|  |  | The Web Conference | 2018-2019 |
|  |  | AAAI Conference on Artificial Intelligence. AAAI Conference on Artificial Intelligence | 2018 |

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| **Broadcast or Media Engagements** | | | |
|  |  | Interviewed on "Zap Aeiou – Seis anos e mil milhões de links depois, cientistas concluem que a Internet está a crescer (e a encolher)", Zap Aeiou | 2021 |
|  |  | Interviewed on "World Economic Forum – What these researchers discovered after studying the internet for 6 years", World Economic Forum | 2021 |
|  |  | Interviewed on "Australian Science – We spent six years scouring billions of links, and found the web is both expanding and shrinking", Australian Science | 2021 |
|  |  | Interviewed on "Radio Adelaide – Dynamics of online diversity and dominance on the web", Radio Adelaide | 2021 |
|  |  | Interviewed on "RT News -- 60-70% of world’s attention focused on just 10 online domains, according to latest research", RT News | 2021 |
|  |  | Interviewed on "Science Alert -- The Same Handful of Websites Are Dominating The Web And That Could Be a Problem", Science Alert | 2021 |
|  |  | Interviewed on "Canaltech Brasil – Internet mundial cresce ao mesmo tempo em que está cada vez menor; entenda", Canaltech Brasil | 2021 |
|  |  | Interviewed on "TechXplore – We spent six years scouring billions of links, and found the web is both expanding and shrinking", TechXplore | 2021 |
|  |  | Interviewed on "ELE Times – Category Killers of the Internet are Significantly Reducing Online Diversity", ELE Times | 2021 |
|  |  | Interviewed on "Foreign Affairs – MIL-Evening Report: We spent six years scouring billions of links, and found the web is both expanding and shrinking", Foreign Affairs | 2021 |
|  |  | Interviewed on "News Break – We spent six years scouring billions of links, and found the web is both expanding and shrinking", News Break | 2021 |
|  |  | Interviewed on "MediaNet – Category killers of the internet are significantly reducing online diversity", MediaNet | 2021 |
|  |  | Interviewed on "The Conversation – We spent six years scouring billions of links, and found the web is both expanding and shrinking", The Conversation | 2021 |
|  |  | Interviewed on "Mirage News – Category killers of internet are significantly reducing online diversity", Mirage News | 2021 |
|  |  | Interviewed on "TechXplore – Category killers of the internet are significantly reducing online diversity", TechXplore | 2021 |
|  |  | Interviewed on "EurekAlert – Category killers of the internet are significantly reducing online diversity", EurekAlert | 2021 |
|  |  | Interviewed on "ABC News – Facebook promised to ban anti-vaxxers. But pages are still up and they've been selling t-shirts", ABC News | 2021 |
|  |  | Interviewed on "SYN Media – Radio interview about the ways misinformation spreads through social media and how that can affect us.", SYN Media, Melbourne | 2020 |
|  |  | Interviewed on "The Conversation – Coronavirus infecting Australian jobs: vacancy rates down since early February", The Conversation | 2020 |
|  |  | Interviewed on "Nautil.us – Scientists Can Predict Your Job By Your Social-Media Personality", Nautil.us | 2020 |
|  |  | Interviewed on "Bloomberg Businessweek – The Best Way to Change Your Job Is to Focus on Your Personality", Bloomberg Businessweek | 2020 |
|  |  | Interviewed on "Nature Index – Scientists are curious and passionate and ready to argue", Nature Index | 2020 |
|  |  | Interviewed on "BBC – How your Twitter feed could help find your dream job", BBC | 2020 |
|  |  | Interviewed on "The Conversation – Robot career advisor: AI may soon be able to analyse your tweets to match you to a job", The Conversation | 2019 |
|  |  | Interviewed on "2ser – Facebook and Fake News" | 2019 |
|  |  | Interviewed on "ABC radio – hiding likes make Facebook fairer", ABC radio | 2019 |
|  |  | Interviewed on "Radio Adelaide – Hiding the Number Of Likes On Social Media", Radio Adelaide | 2019 |
|  |  | Interviewed on "The Conversation – Can hiding likes make Facebook fairer and rein in fake news? The science says maybe", The Conversation | 2019 |
|  |  | Interviewed on "Sage Research Methods – Studying Online Video Popularity with Stochastic Computational Models", Sage Research Methods | 2019 |

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| **Other Unpublished Scholarly Presentations** | | | |
|  |  | Mapping and countering disinformation and hate speech in online social media, presented to Facebook Content Policy Research Initiative conf. [Youtube video](https://www.youtube.com/watch?v=LlyjMmRXb5s) | 2020 |

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| **Community Contributions** | | | |
|  |  | **Legal / Civil rights,** Media Entertainment and Arts Alliance: Our paper "Layoffs, Inequity and COVID-19: A Longitudinal Study of the Journalism Jobs Crisis in Australia from 2012 to 2020" (Nik Dawson, Sacha Molitorisz, Marian-Andrei Rizoiu, Peter Fray) was used today (12 March 2021) as evidence in the [Senate inquiry into media diversity](https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Mediadiversity) by Marcus Strom, the president of Media Entertainment and Arts Alliance (submission 26). | 03/2021 |
|  |  | **Legal / Civil rights,** Together with Amelia Johns and Francesco Bailo, I was invited for detailed discussions with members of Facebook’s content policy and regulation team. The team is looking for means to automatise their content moderation and they would like us to consult about ethonographic and computational approaches. | 10/2020 |
|  |  | **Legal / Civil rights,** I was invited to consult with the Council of Attorneys General of New South Wales (NSW) at the defamation law reform roundtable. The NSW government sought experts to develop their understanding of digital communications issues related to defamation and assist their development of potential reforms in this area. I was the only computer scientist at the table and gave insights into the online social networks and internet service providers’ technical affordances. The consultations led to a law reform proposal introduced in the NSW parliament and voted into law on the 6th of August 2020 | 01/2020 |

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| **Industry Presentations** | | | |
|  |  | NSW Defense Innovation Network Virtual Industry Forum -- "A disinformation wildfire and how we might extinguish it" | 02/2021 |
|  |  | Reserve Bank of Australia -- "Career transitions and managing labour supply and demand" | 11/2020 |
|  |  | NSSN & Klarrio pitchfest -- "A disinformation wildfire and how we might extinguish it" | 09/2020 |
|  |  | Victoria gouvernment, Department of Jobs, Precincts and Regions -- "Skill shortages and worker transitions" | 09/2020 |
|  |  | Treasury NSW -- "Career Development Recommender System & COVID implications for employment" | 04/2020 |
|  |  | Department of Education, Skills and Employment -- "Skills and employment in times of COVID-19" | 04/2020 |