MARIAN-ANDREI RIZOIU – CV

Senior Lecturer, UTS Data Science Institute, FEIT

Web

ORCID: orcid.org/0000-0003-0381-669X
Laboratory: www.behavioral-ds.science
Personal: www.rizoiu.eu
Google Scholar: scholar.google.com/citations?user=J9sjxXYAAAAJ
Other: theconversation.com/profiles/marian-andrei-rizoiu-850922

OVERVIEW

Dr Marian-Andrei Rizoiu is a Senior Lecturer leading the Behavioral Data Science lab at the University of Technology Sydney. His interdisciplinary research crosses computer and social sciences, blending psycholinguistics, digital communication and stochastic modelling to understand human attention dynamics in the online environment, the emergence of influence and opinion polarisation. Dr Rizoiu currently leads grants worth >$2 million from the Commonwealth of Australia to detect and model the spread of mis- and disinformation and its weaponised counterparts – information and influence operations.

Dr Rizoiu's 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 developed theoretical models for online information diffusion, which can account for complex social phenomena. His models answer questions such as "Why did X become popular, but not Y?" and "How can problematic content be detected based solely on how it spreads?". Second, he built skill-based real-time occupation transition recommender systems. These systems link social media-predicted personality profiles with occupation skill requirements to construct personalised career recommendations. His recommender systems answer questions like "Are some jobs better suited to one's personality?" and "Can one be happier and more engaged with a job aligned with their personality?". Individuals can use these recommender systems to ask: "What jobs can I readily perform based on my current skills?" and "What skills should I acquire to transition to a new job?"

Marian-Andrei's research receives funding from selective funders such as Meta (Facebook) Research, Defence Science and Technology Group (DSTG), The Department of Home Affairs and the Defence Innovation Network. 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, Nature Index, BBC, and World Economic Forum.

Marian-Andrei disseminates his research to the broader public by regularly contributing to The Conversation. In addition, he also leverages his research to real societal impact by, for example, serving as an expert for the NSW government's Defamation Law Reform or providing evidence for the Australian Federal Senate inquiry into media diversity.

PREVIOUS POSITIONS (IN REVERSE CHRONOLOGICAL ORDER):

Position	Level	Date from – to	Employer	FTE
Senior Lecturer in Behavioral Data Science	Level C	2021-present	The Data Science Institute, University of Technology Sydney	1.0
Lecturer in Data Science	Level B	2019-2021	The Data Science Institute, University of Technology Sydney	1.0
Visiting Professor, Jean Monnet University	-	2019	Jean Monnet University, Saint-Etienne, France	-
Research Fellow in Computer science	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	July 2013 –	ERIC laboratory, Lumière	1.0

	Fellow	May 2014	University Lyon, France	
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:

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 (EXTERNAL THEN INTERNAL, IN REVERSE CHRONOLOGICAL ORDER):

Award	Institution / Organisation	Date of Award
External to UTS		
Best Application Paper Award	Advanced Data Mining and Applications 2022	11/2022
PitchFest award for implementable disinformation prototype	NSW Smart Sensing Network & Klarrio Ltd.	11/2020
CNRS IDEXLYON 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 15 years. I have taught in four countries (Romania, France. Ukraine and Australia), and I have delivered more than 700 hours of lectures and tutoring for Undergraduates, Masters and Honours and I lectured in international excellence degrees programs, such as the European Master of Excellence in Machine Learning and Knowledge Discovery and the Franco-Ukrainian Master of Business Intelligence and Statistics for Management (cooperation between the University Lumiere Lyon and the University of Kharkiv, Ukraine).
- **Supervision completion.** More than 40 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), Machine Learning and Data Mining subjects (association rules mining, decision trees, clustering, symbolic learning, ensemble methods) and Social Media Analysis. This document details the complete list of these courses.

COURSES AND UNITS DEVELOPMENT

Australian National University (2016-2019) convened the course Document Analysis, which is aimed at third-year Bachelors's and Masters's 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, the speaking is at the proper speed and is easily understandable."*
>
> *"Bloke loves his social media enthusiasm."*

COURSE-BASED DEGREE SUPERVISIONS

2023: **Analytics Capstone Project** – two projects:

- **KAMMM Researchers, 5 students**: Matthew Ghannoum, Yang Shih-Yu, Georgius Matthew Louis, Aaron Anders Salim, Mehar Singh
- **Data Capitol (DC), 5 students**: Kashish Agarwal, Kashish Agarwal, Tan Tri Ngo, Yash Shinde, Johnson Wang, Callum Liasides

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 of 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, the student did a one-month internship in the 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 of 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, the student did a one-month internship in the industry (in banks, insurance companies or software development enterprises)

2009 – 2010: **Research Initiation (Masters of 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*
2023:	Sem. 1	***Invited Lecture* Cyber Conflict and Information Warfare (25 postgrad students, Macquarie University)** Detecting Information operation agents using the reaction of social systems.	*2h*

		***Lecturer* Technology Research Methods, course code: 32931 (25 postgrad students, UTS)** I delivered 2 modules: Quantitative Methods in Science and Modelling Information Flow	10h
2022:	Sem. 2	***Guest lecture* Modeling information flow in Online Social Media using Hawkes Point Processes (50 students, undergrad at Wroclaw University of Science and Technology, Poland)** Detecting organised opinion manipulation, detecting bots and trolls.	*2h*
		***Invited Lecture* Summer Institute in Computational Social Science (30 graduate students, National Chengchi University Taiwan).** Understanding online opinion polarization	*2h*
		***Invited Lecture* Summer Institute in Computational Social Science (50 graduate students, University of Sydney).** Understanding online opinion polarization	*2h*
	Sem. 1	***Lecturer* Technology Research Methods, course code: 32931 (25 postgrad students, UTS)** I delivered 2 modules: Quantitative Methods in Science and Modelling Information Flow	10h
		***Invited lecture* Postech AI Research ML Winter School 2022 (15 graduate students,** Pohang University of Science and Technology, Korea). Understanding online opinion polarization	
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 Undergraduate)** Concepts of data warehousing and OLAP techniques, fundamental data mining algorithms.	*30h*
2015: adjunct @ANU	Sem. 2	**Document Analysis (3rd-year Undergraduate and Honours)** Notions of classification and clustering, graph theory, visualisation tools, centrality and community measures, sentiment analysis.	*20h*
2013 – 2014: Teaching	Sem. 1	**Software Methodologies (Tutoring Masters Erasmus Mundus DMKM)** Development of computer systems, complex systems.	*15h*

Assistant University Lyon 2		**Numerical Machine Learning (Lecturing Master Erasmus Mundus DMKM)** Association rules mining and ensemble methods.	*3h*
		Object Oriented Programming (Lecturing&Tutoring Masters IDSM Kharkov) Introduction to object-oriented programming, Java GUIs, and 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 to object-oriented programming, Java GUIs, and 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 to object-oriented programming, Java GUIs, and 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 to 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, and 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, and reports.	*14h*
2008 – 2009 : TA Polytechnic	Sem. 1	**Communication Networks (Tutoring Engineering undergraduates)** Notions of networking, communication protocols (TCP, IP, SSH), routing protocols (OSPF, RIP, IS-IS), local networks.	*56h*

Bucharest			
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*
Other courses capable of teaching:		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 market 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 the detection of 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 resulting models are the current state-of-the-art in predicting the total size of information bursts on Twitter [25] and in forecasting the future popularity of online videos on Youtube [21][24]**. Subsequent work uses Bayesian learning to adapt 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 recommendations. 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 advertisement data. The outcome is a **job recommender system to help workers identify job transition pathways personalised to their skill 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 the occupations of individuals are closely linked to their personality profiles quantified 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

- I have published 55 publications (38 fully refereed conference papers, 14 refereed journal articles, 2 peer-reviewed book chapters and 1 patent).
- I have a lifetime H-index of 24; i10-index of 32; 1656 citations (Google Scholar, 09/07/2023)
- 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

[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

Conferences

[3] Kong, Q., Calderon, P., Ram, R., Boichak, O., & Rizoiu, M. A. (2023). Interval-censored Transformer Hawkes: Detecting Information Operations using the Reaction of Social Systems. In *ACM Web Conference 2023 - Proceedings of the World Wide Web Conference, WWW 2023* (pp. 1813-1821). doi:10.1145/3543507.3583481

[4] Ram, R., & Rizoiu, M. -A. (2022). Data-driven ideology detection: a case study of far-right extremist. In *Defence Human Sciences Symposium*. Sydney, Australia.

[5] Ahadi, A., Kitto, K., Rizoiu, M. -A., & Musial-Gabrys, K. (2022). Skills taught vs skills sought: using skills analytics to identify the gaps between curriculum and job markets. In *Proceedings of the 15th International Conference on Educational Data Mining* (pp. 538-542). UK: International Educational Data Mining Society. doi:10.5281/zenodo.6853121

[6] Rizoiu, M. -A., Willingham, T., & Kernot, D. (2022). Grey Zone activity: measuring the resilience of social systems to influence operations. In *Australian Defence Science, Technology and Research Summit*. Sydney.

[7] Kong, Q., Booth, E., Bailo, F., Johns, A., & Rizoiu, M. A. (2022). Slipping to the Extreme: A Mixed Method to Explain How Extreme Opinions Infiltrate Online Discussions. In *Proceedings of the International AAAI Conference on Web and Social Media* Vol. 16 (pp. 524-535).

[8] Xu, D., Yang, H., Rizoiu, M. A., & Xu, G. (2022). Being Automated or Not? Risk Identification of Occupations with Graph Neural Networks. In *Advanced Data Mining and Applications* Vol. 13725 LNAI (pp. 520-534). Switzerland: Springer. doi:10.1007/978-3-031-22064-7_37

[9] Largeron, C., Mardale, A., & Rizoiu, M. -A. (2021). Linking the Dynamics of User Stance to the Structure of Online Discussions. In *Advances in Intelligent Data Analysis XIX* Vol. 12695. Switzerland: Springer. doi:10.1007/978-3-030-74251-5_22

[10] 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)*. Piscataway, USA: IEEE. doi:10.1109/bigdata50022.2020.9377773

[11] Kong, Q., Ram, R., & Rizoiu, M. -A. (2020). Evently: Modeling and Analysing Reshare Cascades with Hawkes Processes. In *WSDM '21: Proceedings of the 14th ACM International Conference on Web Search and Data Mining* (pp. 1097-1100). USA: ACM. doi:10.1145/3437963.3441708

[12] 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* (pp. 918-921). USA: ACM. doi:10.1145/3437963.3441695

[13] 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

[14] 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

[15] Kong, Q., Rizoiu, M. -A., & Xie, L. (2020). Describing and Predicting Online Items with Reshare Cascades via Dual Mixture Self-exciting Processes. In *CIKM '20: PROCEEDINGS OF THE 29TH ACM INTERNATIONAL CONFERENCE ON INFORMATION & KNOWLEDGE MANAGEMENT* (pp. 645-654). ELECTR NETWORK: ASSOC COMPUTING MACHINERY. doi:10.1145/3340531.3411861

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[17] Zhang, R., Walder, C., & Rizoiu, M. A. (2020). Variational inference for sparse Gaussian process modulated Hawkes process. In *AAAI 2020 - 34th AAAI Conference on Artificial Intelligence* Vol. 34 (pp. 6803-6810). USA: AAAI. doi:10.1609/aaai.v34i04.6160

[18] 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:10.1145/3336191.3371821

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[20] Mihaita, A. -S., Papachatgis, Z., & Rizoiu, M. -A. (2020). Graph modelling approaches for motorway traffic flow prediction. In *2020 IEEE 23RD INTERNATIONAL CONFERENCE ON INTELLIGENT TRANSPORTATION SYSTEMS (ITSC)* (pp. 8 pages). ELECTR NETWORK: IEEE. doi:10.1109/ITSC45102.2020.9294744

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[22] 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).

[23] 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

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RESEARCH FUNDING (SECURED)

Since my last promotion in June 2021, I have been awarded 15 grants and research contracts (24 over my whole career) with a total budget of $2.47 million ($3.08M career), including two Cat.1 grants. Most of this funding came to UTS as the lead organisation. Since 2021, I have been or am the lead CI of 10 grants (13 careers) worth $2.04 million ($2.14M career).

2023 – 2024 Wikimedia Foundation Inc., **"Improving Wikimedia resilience against the risks of content-generating AI systems"**, $69,579, CI

- **CI team:** M. Davis, H. Ford, **M.A. Rizoiu** (all UTS)
- **Summary:** Study and understand the usage of generative AI by Wikipedia editors and design policies around it.
- **Role:** Lead the data science component, and supervise Research Assistants.

2023: UTS cross-faculty grants, **"Learning to navigate expert-expert disagreement: An interdisciplinary approach"**, $50,000, CI

- **CI team:** S. Knight, A. J. Wilson, **M.A. Rizoiu**, S. Xavier, J.E. Frawley, K.R. Heggart, C. Bonfiglioli (all UTS).
- **Summary:** Understand how the wider public perceives expert disagreement and how it

reduces confidence.
- **Role:** Help with the social media analysis component of the project and co-supervise RA.

2023 – 2025: Defence Innovation Network Strategic Investment Initiative, **"Predicting the Effectiveness of State-sponsored Influence Operations: a Case Study of the Solomon Islands and Melanesia."**, $500,000, lead-CI
- **CI team: M.A. Rizoiu**, F. Bailo (USYD), A. Johns, J. Droogan (MQU), J. Hunt (MQU), C. Hawksley (UOW)
- **Summary:** An interdisciplinary approach to detect and forecast the effectiveness of information operations, with a case study of the Solomons Islands and Melanesia.
- **Role:** I lead the project; I administer it, supervise postdocs and HDR students, and manage the relationships with the software developers.

2023 – 2024 Akkodis Australia Consulting Pty Ltd, **"Centre for Skills – Identifying the gap between talent required and students trained"**, $40,059, lead-CI
- **CI team: M.A. Rizoiu** (UTS)
- **Summary:** Apply a skill-based approach to understand the alignment between Microsoft boot camps and the requirements of employers.
- **Role:** I am the sole CI of the project; I supervise the RA, design the research and manage the relationship with the client.

2023 Defence Science and Technology Group of the Department of Defence, "**NARRATE – Narrative and Relationship Real-time Awareness Topical Explorer"**, $100,000, lead-CI
- **CI team: M.A. Rizoiu** (UTS), O. Boichak (USYD)
- **Summary:** Develop a framework and software system to identify information operations agents and their narratives.
- **Role:** I lead the project, manage the software developers, supervise the postdoc, and supervise the deliverables.

2023 Australian Research Council, LIEF Grant, **"The International Digital Policy Observatory"**, $215, 000, CI
- **CI team:** T. Flew, R. Nicholls, D. Wilding, K. Gulson, L.B. Moses, H. Ford, J. Gray, W. Clapton, **M.A. Rizoiu,** J. Hutchinson, D. Joyce, S. Molitorisz, K. Lee, C. Lumby
- **Summary:** Develop the world's first comprehensive database to track developments in
- digital/Internet regulation internationally.
- **Role:** I am the project's computer scientist; I advise on mis- and dis-information related policies.

2022 – 2025 Commonwealth Scientific and Industrial Research Organisation (Data61), "**Design and development of a framework and supporting toolkit for Diversity and Inclusion in AI system"**, $30,000, lead-CI
- **CI team: M.A. Rizoiu** (UTS)
- **Summary:** The project applies causal reasoning to increase diversity and inclusion; the project supports the top-up of Amelie Girard.
- **Role:** I am the principal supervisor of Amelie, the student supported by the project.

2022 – 2025 Akkodis Australia Consulting Pty Ltd, "**A Machine Learning Approach to Skills Identification and Team Formation"**, $15,000, lead-CI
- **CI team: M.A. Rizoiu** (UTS)
- **Summary:** This is the Industrial Doctoral Project of Anatoli Kovalev; his PhD aims to understand how to solve skill shortages via training.
- **Role**: I am the principal supervisor of Anatoli Kovalev.

2022 – 2025 Department of Home Affairs, "**Disinformation Defence Initiative: Delivering tools and analysis to fight the growing threat of disinformation for Australia",** $1,158,726, lead-CI
- **CI team: M.A. Rizoiu** (UTS), H. Farid (UC Berkeley), A. Berry (UTS)
- **Summary:** Analyse, detect and counter misinformation in Australia; this contract is a significant investment from the Department of Home Affairs.
- **Role:** I am the lead CI of the project; I supervise the postdocs, manage the relationship with the Department, and lead the research and the delivery of milestones.

2022 – 2024: Polish National Science Centre OPUS grants **"Streaming social data"**, $313K. CI
- **CI team:** R. Michalski (Wroclaw University of Science and Technology), **M.A. Rizoiu** (UTS), O. Lizardo (UCLA), M. Karsai (Central European University)
- **Summary:** Understand how to model and analyse social media data, to solve complex societal issues, from polarization to mis- and dis-information.

- **Role:** I am a computer scientist with expertise in social media collection and analysis.

2022 – 2024 League of Scholars Pty Ltd, **"Personality Impacts on Individuals, Enterprises and Economies"**, $15,000, Lead-CI.
- **CI team: M.A. Rizoiu** (UTS)
- **Summary:** This is the Industrial Doctoral Project of Xian (Elaine) Gong; her PhD links the personality of individuals (quantified using social media data) and various employment outcomes.
- **Role**: I am the principal supervisor of Xian (Elaine) Gong.

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 result in disinformation and problematic content flow.
- **Role:** I am the lead CI of this project: I constructed the idea, built the team, led the development of the proposal and managed the delivery. Within the project, I supervise the engineering team responsible for making the data gathering and annotation prototype.

2021 – 2023: 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"**, $300K, lead-CI.
- **CI team: M.A. Rizoiu**, 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 several persons associated with hate speech diffusion targeting vulnerable populations.
- **Role**: I am responsible for 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 polarisation 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 in 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, interviewed the founders of the start-up, evaluated the technology, 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 led the development of the grant proposal, developed the idea, and managed the project (including finances). I led the Computer Science team in 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 led the development of the grant proposal, developed the idea, and managed the project (including finances). I led the Computer Science team in developing hate speech detection algorithms; I delivered the final report.

RESEARCH FUNDING (SUBMITTED, IN REVIEW)

1. UTS Collaboration Grant, **"Anime and the far-right: exploring the popular culture series secretly fuelling youth radicalisation",** $50,000, CI
   - **CI team:** J. Lee, E. Booth, **M.A. Rizoiu** (UTS)

HDR STUDENT SUPERVISION

1. **Currently supervising** 11 PhD students (7 as primary supervisor, 4 as co-supervisor) and 1 Honours student (primary supervisor).
2. I have **successfully supervised and graduated** more than 25 research students and staff – 5 PhD students, 17 Honours and Masters students, 1 postdoc, 1 visiting postgrad student and 4 summer scholar students.

Details of research degree students who completed their PhDs	**Completion**
Lead supervisor, PhD thesis – Non-parametric Bayesian Estimation of Hawkes Triggering Kernels, Rui Zhang	2022
Lead supervisor, PhD thesis – Linking Epidemic Models and Self-exciting Processes for Online and Offline Diffusions, Quyu Kong	2022
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 – Discovering Latent Knowledge on Individuals, Enterprises and Economies from Language Models, Xian (Elaine) Gong	2022
Joint supervisor, PhD thesis – A Recommendation System to Support Career Path	2022

Decision-making, Dawei Xu	
Joint supervisor, PhD thesis – Ontology-based job and skill demand analysis in the context of strategic workforce planning, Daniela Elia	2022
Lead supervisor, PhD thesis – Interactive Intelligence - Fairness in AI for Social good, Amelie Girard	2022
Lead supervisor, PhD thesis – Detecting and Addressing the Spread of Problematic Content in Social Media, Lanqin (Frankie) Yuan	2021
Lead supervisor, PhD thesis – Modelling Cross-Platform Influence in Partially-Observed Information Diffusions, Pio Calderon	2021
Lead supervisor, PhD thesis – Empowering Knowledge workers using AI Techniques to foster innovative new service development process, Anatoli Kovalev	2020
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
Details of research Honours and Masters students	**Start Date**
Lead supervisor, Honours thesis – Labor Market Knowledge Graph - Proof of Concept, Matthew Ghannoum	2023
Lead supervisor, Honours thesis -- Disinformation in social media, Callum Pastuszak	2022
Lead supervisor, Examine and detect political topics and individual users' political behaviour in real time, Kifan Xiao	2022
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 polarisation 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	2018

(David) Liu

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 – Analysing diffusion patterns in large social networks, Mingyuan Cui	2015

SERVICE AND ENGAGEMENT

GRADUATE EXAMINATIONS

Examination committee member, UTS Zhao Z	2022
Examination committee member, UTS Liu Q	2021
Examination committee member, UTS Xu J	2021
Examination committee member, UTS, Hou W	2020

COMMITTEES AND SELECTION PANELS

2022 Cross-Faculty Collaboration Scheme Launch Event	2022
Information Warfare Innovation Community, Defence Science and Technology Group	2022-present
HASS-STEM integration	2021
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

Reviewing / Refereeing

Nature Human Behavior	2022
SIG KDD 2022	2022
Transactions on Knowledge Discovery from Data	2021
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

Broadcast or Media Engagements

Interviewed on "7News – The Power of the Code: The true impact of social media on society", Youtube 7NEWS Grounded	2023
Interviewed on "The Conversation – Can ideology-detecting algorithms catch online extremism before it takes hold?"	2023
Interviewed on "Yahoo News – Can ideology-detecting algorithms catch online extremism before it takes hold?", Yahoo News	2023
Interviewed on "Tolerance.ca – Can ideology-detecting algorithms catch online extremism before it takes hold?"	2023
Interviewed on "Work3 - The Future of Work – Role vs Skills, AI Recommendations and The Power of Weak Links"	2023
Interviewed on "Radio Adelaide – Power of the weak links in LinkedIn", Radio Adelaide	2022
Interviewed on "ABC Radio Hobart – Power of the weak links in LinkedIn"	2022
Interviewed on "The Conversation – A huge LinkedIn study just showed which connections are better when searching for a job", The Conversation	2022
Interviewed on "PharmaInFocus – Q&A interview on preprints misuse by conspiracy theories groups"	2021
Interviewed on "2ser radio – podcast on online disinformation"	2021
Interviewed on "2ser radio – interview on labour markets"	2021
Interviewed on "LinkedIn News Australia – Want to pivot careers? Ask AI", LinkedIn News Australia	2021
Interviewed on "World Economic Forum -- Fancy a career change? AI could help you decide your next move", World Economic Forum	2021
Interviewed on "The Conversation -- How AI can help choose your next career and stay ahead of automation", The Conversation	2021
Interviewed on "The Mandarin -- Skill-driven recommendations for job transition pathways", The Mandarin	2021
Interviewed on "The Conversation -- How AI can help choose your next career and stay ahead of automation"	2021
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 the 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

Other Unpublished Scholarly Presentations

UC Berkeley – Breaking free of the arms race Monitor, detect, assess and react to influence operations, presented to UC Berkeley iSchool	2023
UniAdelaide – Interval-censored Transformer Hawkes Detecting Information Operations using the Reaction of Social Systems, presented to Mathematical Sciences Colloquium, UniAdelaide	2023
WUST AI series – Slipping to the Extreme: A Mixed Method to Explain How Extreme Opinions Infiltrate Online Discussions, presented to Department of Artificial Intelligence at the Wroclaw University of Technology	2022

IFCYBER institute – Slipping to the Extreme: A Mixed Method to Explain How Extreme Opinions Infiltrate Online Discussions, presented to IFCYBER institute	2022
A computational social scientist's guide to information diffusion modeling – and where to next?, presented to Computational social science in Australia: approaches, capabilities, and opportunities	2022
Breaking free of the arms race Monitor, detect, assess and react to influence operations, presented to Fighting Truth Decay workshop	2022
Data Discovery Seminar – Modelling and Measuring Online Social Influence: theoretical approaches and open-source software, presented to Data Discovery Seminar	2021
SAGE Research Methods: Doing Research Online, presented to SAGE Research Methods	2021
Discovering the Strategies of Coordinated Disinformation via Hawkes Intensity Processes, presented to 8th European Communication Conference	2021
Mapping and countering disinformation and hate speech in online social media, presented to Facebook Content Policy Research Initiative conf. Youtube video	2020

Advisory, Consultancy or Expert Witness Appointments

Department of Home Affairs. I did a debriefing session with senior executives at the Department of Home Affairs on the Information Integrity Initiative project. It contained a joint presentation with Prof Farid from UC Berkeley, a round-table with senior executives, and a workshop with action officers.	06/2023
Office of the Attorney General. I participated in the expert panel fo the Defamation Law review of proposal – office of the Attorney General.	09/2022

Community Contributions

Legal / Civil rights, The Organisation for Economic Co-operation and Development (OECD) published the policy report "Artificial Intelligence and employment: New cross-country evidence" which cites and uses my research "Skill-driven recommendations for job transition pathways" as evidence	11/2021
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 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 ethnographic 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

Industry Presentations

Department of Home Affairs Social Cohesion and Citizenship – Information Integrity Initiative	06/2023
US National Security Agency – US Department of State – Breaking free of the arms race Monitor, detect, assess and react to influence operations	05/2023
US Department of State – Breaking free of the arms race Monitor, detect, assess and react to influence operations	05/2023
DSTG workshop "Pandemic REDI"	05/2022
DIN Industry Forum – Information Warfare & Influence Operations	04/2022

Facebook Core – Mapping Online Problematic Content: Mixing Qualitative Approaches with State-of-the-art Machine Learning	04/2022
DIN Digital Influence Technology Workshop – A disinformation wildfire and how we might extinguish it	06/2021
UTS Offshore Learning Centre – Uncovering online misinformation	05/2021
Information Warfare StarShot Inaugural Strategy Workshop	05/2021
LinkedIn Tech Talk Series – Occupation transition recommender systems	09/2021
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 government, 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