

Francesco Osborne, PhD

Curriculum Vitae – 2021

EXECUTIVE SUMMARY

I am a Research Fellow at the Knowledge Media institute of The Open University in Milton Keynes, UK, where I lead the Scholarly Knowledge Mining (SKM) team (<http://skm.kmi.open.ac.uk/>). I have an MSc and a PhD in Computer Science from the University of Turin, Italy. My research covers Artificial Intelligence, Information Extraction, Knowledge Graphs, Science of Science, Semantic Web, Research Analytics, and Semantic Publishing. I have authored more than eighty peer-reviewed publications in top journals and conferences in my research areas, including the Semantic Web Journal, Future Generation Computer Systems, the International Journal of Human-Computer Studies, ISWC, ESWC, WebConf, JCDL, TPD, and UMAP. I regularly organize scientific events and special issues on these topics. Most recently I chaired the Workshop on Deep Learning For Knowledge Graphs (DL4KG 2020 at ESWC), the Workshop on Scientific Knowledge Graphs (SKG 2020 at TPD), and acted as guest editor for two special issues of the Semantic Web Journal and Quantitative Science Studies. I am also a member of the Editorial Board of the Data Intelligence Journal and the Knowledge Graph Construction W3C Community Group.

Since joining KMi in 2013, I have contributed, either as PI, Co-PI, or Technical Director to bringing in over £770K in funding to the SKM team, including cash and in-kind support from the top two commercial academic publishers in the world, Elsevier and Springer Nature.

I collaborate with a number of commercial organizations (e.g., Springer Nature, Elsevier, Microsoft, Digital Science), non-profit organizations (e.g., OECD, CSET, FBK), and universities (e.g., Paris 13, Bologna, Cagliari, Trento, Karlsruhe Institute of Technology, Oxford, Vienna, Georgetown, Amsterdam, Tokyo, and others). I am a Visiting Research Fellow at the Paris 13 University and I am regularly invited to present my research at universities (e.g., Vienna, Cagliari) and other organizations (e.g., Springer Nature, Chan Zuckerberg Initiative, OECD, CSET).

Over the years, the SKM team has created several tools and resources supporting scholarly data analytics. My first contribution to this field was *Klink*, an innovative approach to automatically generating ontologies of research topics from large corpora of publications. I used Klink to create the *Computer Science Ontology* (CSO, <http://cso.kmi.open.ac.uk>), a taxonomy of research topics which is an order of magnitude bigger than the most widely used alternative, the ACM Computing Classification, and has been officially adopted by Springer Nature (<https://tinyurl.com/y5c92bxz>). Building on this work, I designed and co-developed the *Smart Topic Miner* (STM), a tool for annotating conference proceedings with a selection of topics drawn from CSO. STM has been in routine use by editors at Springer Nature since 2016 to generate metadata for all their computer science proceedings, including LNCS, LNAI, IFIP-AICT and others. This solution brought a 75% cost reduction and dramatically improved the quality of the annotations, resulting in 12M additional downloads from the SpringerLink portal. This work has been shortlisted as one of the Impact Cases to be submitted to the 2021 REF.

More recently, my research has focused on the automatic generation of large-scale scholarly knowledge graphs. An output of this research is the *Artificial Intelligence Knowledge Graph* (<http://w3id.org/aikg>), a knowledge base that describes 850K methods, tasks, materials, and metrics extracted from the most cited 330K articles in AI. In order to support the analysis of research trends across academia and industry we also produced *Academia/Industry DynAmics* (AIDA) *Knowledge Graph* (<http://w3id.org/aida>), a knowledge graph that maps 21M publications and 8M patents to the relevant research topics and industrial sectors.

Currently, I am also co-ordinating the process of adapting our technologies to the Biomedical fields and, in this context, we are contributing to the large scientific effort around COVID-19 by extracting key medical concepts (e.g., symptoms, risk factors) from a large collection of scientific articles.

1 HIGHER EDUCATION

- 2015 PhD in Computer Science from the University of Torino, Italy.
- 2010 Master Degree in ICT from the University of Torino, Italy.

2 APPOINTMENTS AND EXPERIENCE

- 2020-now Research Fellow (Permanent) at the Knowledge Media Institute of the Open University in Milton Keynes, UK
- 2018-now Visiting Research Fellow at Paris 13 University in Paris, France
- 2017-2020 Research Fellow (Fixed Term) at the Knowledge Media Institute of the Open University in Milton Keynes, UK
- 2015-2017 Research Associate at the Knowledge Media Institute of the Open University in Milton Keynes, UK
- 2013-2014 Research Assistant at the Knowledge Media Institute of the Open University in Milton Keynes, UK
- 2011-2012 Visiting PhD Student at the Knowledge Media Institute of the Open University in Milton Keynes, UK

3 CONTRIBUTIONS TO OPEN UNIVERSITY TEACHING AND STUDENT SUPPORT

I do not have teaching duties at the Open University. I support several students at different levels in the context of our collaborations with the University of Cagliari and the University of Bologna.

- 2020-now Co-supervising students for the Big Data course of the University of Cagliari
- 2015-now Regularly supervising master students in the context of internships and the Erasmus programme.
- 2011-2013 Teaching assistant for the courses of Web Programming and Digital Literacy at the Faculty of Literature and Philosophy, University of Torino.
- 2006-2008 Tutor for the course of digital journalism at the Faculty of Literature and Philosophy, University of Torino.

4 CONTRIBUTIONS TO ADMINISTRATION AND MANAGEMENT

I lead the Scholarly Knowledge Mining team. Since 2013, I have supervised/line managed several researchers/students/developers.

Line Manager of:

- 2019-now Angelo Salatino (Research Associate)
- 2017-2019 Thiviyan Thanapalasingam (Research Assistant)

Researchers/Developers Supervised:

- 2018-2019 Hakan Ezgi Kızılöz (Visiting Researcher)
- 2017-2019 Andrea Mannocci (Research Associate)
- 2016-2017 Patrick Wang (Research Associate)
- 2016-2017 Carlo Allocca (Research Associate)

2016	Aswin Sundaram (Developer)
2015-2016	Helene de Ribaupierre (Research Associate)
2015-2016	Giorgio Basile (Research Assistant)

Students Supervised:

2020-now	Antonello Meloni (Master Student)
2020-now	Mirco Serra (Master Student)
2020	Archie Walton (Visiting High School Student)
2019-now	Simone Angioni (Visiting Master Student and then Visiting PhD Student)
2018-2020	Danilo Dessì (Visiting PhD Student)
2018	Salvatore Zagaria (Visiting Master Student).
2015-2019	Angelo Salatino (PhD Student)
2015	Catia Prandi (Visiting PhD Student)
2013-2014	Giuseppe Scavo (Visiting Master Student)

5 RESEARCH AND SCHOLARSHIP

Research Interests

Current research interests include Information Extraction, Knowledge Graph Generation, Science of Science, Semantic Web, Research Analytics, Machine Learning, Ontology Learning, and Semantic Publishing.

Research funding

- 2021-2022 **Intelligent technologies to support editorial strategies at Springer Nature – Co-PI and Technical Director.** The project aims at designing several intelligent services for assisting Springer Nature workflow, predicting research dynamics, and informing editorial and marketing decisions.
Funder: Springer Nature
Grant: £65K
- 2020 **Exploiting KMi's scholarly analytics research to generate new sponsorship opportunities in Life Science – Co-PI and Technical Director.** The main aim of this project is to support the migration of our scholarly analytics technologies to the Life Science domain in order to open up new exploitation opportunities in this area.
Funder: HEIF Grant from The Open University.
Grant: £38K
- 2019-2020 **Intelligent technologies to support editorial strategies and marketing campaigns at Springer Nature – Co-PI and Technical Director.** The project aimed at developing novel intelligent technologies for automatically evaluating the quality of scientific conferences and informing editorial decisions. A significant outcome was the development of novel technologies for characterising corporate clients according to

their research interests, acquiring a better understanding of the relationship between academy and industry, and producing tailored packages of editorial products.

Funder: Springer Nature

Grant: £100K

2018-2019 **Supporting Editorial Activities at Springer Nature – Co-PI and Technical Director.** The project aimed at fostering Springer Nature editorial activities by supporting them with a variety of smart solutions leveraging artificial intelligence, data mining, and semantic technologies.

Funder: Springer Nature

Grant: £65K

2016-2018 **Developing Semantic Technologies at Springer Nature – Co-PI and Technical Director.** This project created Smart Topic Miner, the system which is now routinely used to assist Springer Nature editors in classifying conference proceedings, and Smart Book Recommender, an ontology-based recommender system for selecting the best editorial products to market at specific venues.

Funder: Springer Nature

Grant: £50K

2014-2017 **Automatic Detection of Research Trends – Supervisor.** This grant funded the PhD of Angelo Salatino, who developed a novel approach to forecasting the emergence of new research topics.

Funder: Springer Nature

Grant: £60K for PhD studentship

2014-2017 **Rexplore – Technical Director.** The project developed innovative services for exploring and making sense of scholarly data, using large-scale data mining, machine learning and semantic technologies. I led the research and development activities of the team working on the project.

Funder: Springer Nature, Elsevier, and The Open University (HEIF fund).

Grant: £400K combined funding in cash and kind.

6 POSTGRADUATE STUDENT SUPERVISION

2015-2019 Main supervisor of Angelo Salatino (PhD student)

7 EXTERNAL ACADEMIC ACTIVITIES

Membership of Government or other public committees

2020-now Knowledge Graph Construction W3C Community Group

2017-2019 Member of the Organisation for Economic Co-operation and Development (OECD) Expert Advisory Group.

External examining

- 2020 External examiner of the PhD student Giuseppe Futia (Politecnico di Torino, Italy, 2018-2020).
- 2019 External examiner of the PhD student Danilo Dessì (University of Cagliari, Italy, 2017-2019).
- 2017 External examiner of the PhD student Dario De Nart (University of Udine, Italy, 2014-2017).

Internal examining

- 2020 Internal examiner for a 1st year VIVA of the PhD student Kai Waddington (The Open University, UK).
- 2019 Internal examiner for a 1st year VIVA of the PhD student Zeeshan Jan (The Open University, UK).

Academic editorial work

- 2021 Co-editor of Semantic Web Journal special issue on Deep Learning for Knowledge Graphs.
- 2021 Co-editor of Quantitative Science Studies special issue on Scientific Knowledge Graphs and Research Impact Assessment.
- 2021-now Editorial Board Member of Scholarly Communication (Frontiers in Research Metrics and Analytics).
- 2020 Co-editor of Data Science special issue on Scholarly Data Analysis.
- 2019-now Editorial Board Member of the Data Intelligence Journal (MIT Press and Chinese Academy of Sciences)
- 2018 Co-editor of Semantics, Analytics, Visualization: Enhancing Scholarly Data. 3rd and 4th International Workshop (LNCS Vol. 10959). Springer Nature.
- 2018 Co-editor of Proceedings of the EKAW Doctoral Consortium 2018. CEUR Workshop Proceedings 2306.
- 2017 Co-editor of Semantics, Analytics, Visualization: Enhancing Scholarly Data. (LNCS Vol. 9792). Springer Nature.

Contributions to conferences

- 2021 Co-chair of the International Workshop on Scientific Knowledge Representation, Discovery, and Assessment (Sci-K) at The Web Conf 2021.
- 2020 Co-chair of the Science of Science Track at ESWC.
- 2020 Co-chair of the Scientific Knowledge Graph Workshop at TPDL 2020.
- 2020 Co-chair of Reframing Research (RefRefresh) Workshop at SOCINFO 2020
- 2019-2020 Co-chair of Workshop on Deep Learning For Knowledge Graph (DL4KG) at ESWC.
- 2019 Co-chair of the Research of Research Track at ESWC.
- 2019 Co-chair of Data Science special issue (extended papers of the SAVE-SD Workshop)
- 2018 Co-chair of Doctoral consortium at EKAW 2018.
- 2018 Co-chair of Reframing Research (RefRefresh) Workshop at EUROCSS Symposium.
- 2017 Co-chair of Scientometrics Workshop (Scientometrics 2017 at ESWC).
- 2015-2018 Co-chair of “Semantics, Analytics, Visualisation: Enhancing Scholarly Dissemination” Workshop (SAVE-SD 2015-2018 at WWW).

Invited lectures

2020	“Monitoring and Predicting the Impact of Scientific Conferences” at AI day of the Holtzbrinck Publishing Group, Online.
2019	“Understanding Research Data with Semantic Technologies” at Paris 13 University, 2019, Paris, France.
2019	“Smart Topics Miner 2: Improving Proceedings Retrievability,” at Springer Nature, 2019. Heidelberg, Germany.
2018	“Analysing large-scale Research Data with Semantic Technologies” at Chan Zuckerberg Initiative, 2018, Palo Alto, California, USA.
2018	“Explore large-scale Research Data with Semantic Technologies”, keynote at BigScholar 2018. KDD 2018, London, UK.
2018	“Analysing large-scale Research Data with Semantic Technologies” at Paris 13 University, 2018, Paris, France.
2018	“The Computer Science Ontology” at Springer Nature Hackday 2018. Berlin, Germany.
2018	“Understanding Research with Semantic Technologies” at Workshop on Semantic analysis for innovation policy (OECD) 2018. Paris, France.
2017	“Research 3.0: integrating knowledge graphs in the research process”, keynote at Workshop on Extracting and Modelling Scientific Knowledge from Texts. IC 2017, Caen, France
2016	“Two roads to Semantic Publishing” at Workshop on Semantic Publishing. FORCE 2016, Portland, Oregon.

8 OTHER INFORMATION

Skills

Software Engineering: Software Development, Project Management, UML.

Programming and markup languages: Python, PHP, Java, Javascript, Unix shell scripts, Latex, XML, HTML.

Data Management: SQL, NoSQL, Graph Databases, PostgreSQL, MySQL, MongoDB.

Big Data: ElasticSearch, Hadoop, HBASE, Spark, Hive.

Operating Systems: Unix/Linux, Mac OS X, Microsoft Windows, Android.

Machine Learning and Deep Learning: TensorFlow, Keras, scikit-learn, pandas, gensim, scipy.

Semantic Web Technologies: RDF, OWL, SPARQL, triplestores, ontology engineering, ontology learning.

Recommender Systems: collaborative, content-based, ontology-based, hybrid.

NLP and Data Mining: topic modelling, named entity recognition, entity linking, information extraction, knowledge graph generation.

Awards

- *Best Poster* of the Day Award at ISWC 2020
- DataIQ Award Nominee 2020
- Finalist at the Springer Nature Internal Innovation Competition 2020
- *Best Paper* Award at SAVE-SD 2018.

- *1st prize* at the Semantic Publishing Challenge at the European Semantic Web Conference 2014.
- Best Paper Award Nominee at ISWC 2019 (In-use), ISWC 2019 (Poster), ISWC 2019 (Demo), JCDL 2019, ISWC 2018 (Resources), ESWC 2014, and ICIDS 2011.
- *Best Project Award* at SWSS 2011.

Program committees

WOSP 2014, WLT 2014, WOSP 2015, BigScholar 2015, VOILA 2015, BigScholar 2016, WOSP 2016, ISWC P&D 2016, VOILA 2016, EKAW 2016, Drift-a-LOD 2016, SWM 2017, BigScholar 2017, VOILA 2017, WWW 2017, WOSP 2017, ESWC 2017, ISWC 2017, K-CAP 2017, QEKGraph 2017, Drift-a-LOD'18, RefRefresh 2018, VOILA 2018, WWW 2018, ESWC 2018, ISWC 2018, EKAW 2018, BigScholar 2018, DL4KG 2019, TheWebConf 2019, ESWC 2019, ISWC 2019, CLiC-it 2019, K-CAP 2019, AML 2019, SemEx 2019, CIKM 2020, JIST-KG 2020, ESWC 2020, ECAI 2020, ISWC 2020 (senior), EKAW 2020, SEMEX 2020, CLiC-it 2020, WOSP 2020, IRCDL 2021, TheWebConf 2021, ESWC 2021 (senior), PDyRI'2021, IRCDL 2021, TheWebConf 2021, SEMANTICS 2021 EU.

Session chair

ISWC 2019, ECAI 2020, ISWC 2020.

Reviewer

Journal of Web Semantics, Semantic Web journal, International Journal of Human-Computer Studies, Data Intelligence, Data Science, Future Generation of Computer Systems, PeerJ Computer Science, Information Processing and Management, MethodsX, Journal of Computational Science, EPJ Data Science, Knowledge and Information Systems.

Recent Developments

2020-now **AIDA Conference Dashboard** (<https://aida.kmi.open.ac.uk/dashboard>): It is a tool developed in collaboration with Springer Nature for analysing and comparing conferences in Computer Science.

2020-now **Artificial Intelligence Knowledge Graph, AI-KG** (<http://w3id.org/aikg>): It is a large-scale automatically-generated knowledge graph that describes 850K entities (e.g., tasks, methods, metrics, materials, others) relevant to AI according to 1,2M statements extracted from 333K articles.

2020-now **Academia/Industry DynAmics Knowledge Graph, AIDA** (<http://w3id.org/aida>): It is an innovative resource for supporting large-scale analyses of research trends across academia and industry. It describes 21M publications and 8M patents according to the research topics drawn from the Computer Science Ontology, the type of the author's affiliations (e.g., academy, industry, collaborative), and 66 industrial sectors (e.g., automotive, financial, energy, electronics).

2019-now **CSO Classifier** (<https://github.com/angelosalatino/cso-classifier>): It is an unsupervised approach for automatically classifying research papers according to the Computer Science Ontology. The CSO Classifier takes as input the metadata associated with a research paper and returns a selection of research concepts drawn from the ontology. It is used by several universities and organizations for automatically annotating their research outputs.

2018-now **The Computer Science Ontology (CSO)** (<http://cso.kmi.open.ac.uk>): CSO is a large-scale, open, automatically generated ontology of research areas. It is the largest taxonomy in the field of Computer Science, including about 14K topics and over 162K relationships. I produced it by applying the Klink-2 algorithm on a very large dataset of 16M scientific articles. CSO powers several tools adopted by the editorial team at Springer Nature and is used to enable a variety of solutions,

such as classifying research publications, detecting research communities, and predicting research trends.

2017-2020 **Smart Book Recommender** (<http://skm.kmi.open.ac.uk/sbr/>): A semantic application designed to support the Springer Nature editorial team in promoting their publications at Computer Science venues. It takes as input the proceedings of a conference and suggests books, journals, and other conference proceedings which are likely to be relevant to the attendees of the conference in question.

2016-now **Smart Topic Miner** (<http://stm-demo.kmi.open.ac.uk/>): A tool which uses Semantic Web technologies to classify scholarly publications on the basis of a very large automatically generated ontology of research areas. It was developed to support the Springer Nature Computer Science editorial team in classifying proceedings.

2015-2017 **Garden Monitor App** (<http://www.mksmart.org/gardenmonitor/>): A mobile application that uses machine learning techniques for generating a customized calendar advising users on how to water their garden in the following ten days.

2012-2015 **Klink-2** (<http://skm.kmi.open.ac.uk/klink-2>): An approach that takes as input large amounts of scholarly metadata and automatically generates an OWL ontology containing all the research areas mined from the input data and their semantic relationships.

2012-2017 **Rexplore** (<http://skm.kmi.open.ac.uk/rexplore>): A system that provides an innovative environment for analysing the research landscape and the performance of scientists, universities and scientific communities.

9 PUBLICATIONS

Edited Books

1. Alam, M., Buscaldi, D., Cochez, M., Osborne, F., Reforgiato Recupero, D., Sack, H. (eds.) (2020) Proceedings of the Workshop on Deep Learning for Knowledge Graphs (DL4KG2020) co-located with the 17th Extended Semantic Web Conference 2020 (ESWC 2020), Heraklion, Greece, June 02, 2020 - moved online. CEUR Workshop Proceedings 2635, CEUR-WS.org 2020.
2. Gonzalez-Beltran, A., Osborne, F., and Vahdati, S. (eds.) (2020) Special Issue on Scholarly Data Analysis (Semantics, Analytics, Visualisation). Data Science.
3. Mehwish Alam, Davide Buscaldi, Michael Cochez, Francesco Osborne, Diego Reforgiato Recupero, Harald Sack (eds.) (2019) Proceedings of the Workshop on Deep Learning for Knowledge Graphs (DL4KG2019) Co-located with the 16th Extended Semantic Web Conference 2019 (ESWC 2019), Portoroz, Slovenia, June 2, 2019. CEUR Workshop Proceedings 2377, CEUR-WS.org 2019.
4. Hollink, L., Osborne, F. (eds.) (2018) Proceedings of the EKAW Doctoral Consortium 2018 co-located with the 21st International Conference on Knowledge Engineering and Knowledge Management (EKAW 2018), Nancy, France, November 13, 2018. CEUR Workshop Proceedings 2306.
5. Gonzalez-Beltran, A., Osborne, F., Peroni, S., and Vahdati, S. (eds.) (2018) Semantics, Analytics, Visualization: 3rd International Workshop, SAVE-SD 2017, Perth, Australia, April 3, 2017, and 4th International Workshop, SAVE-SD 2018, Lyon, France, April 24, 2018, Revised Selected Papers.
6. Gonzalez-Beltran, A., Osborne, F. and Peroni, S. (eds.) (2017) Semantics, Analytics, Visualization. Enhancing Scholarly Data: Second International Workshop, SAVE-SD 2016, Montreal, QC, Canada, April 11, 2016, Revised Selected Papers. Semantics, Analytics, Visualization. Enhancing Scholarly Data. eds. Springer Nature.

Chapters in Books

7. Salatino, A.A., Mannocci, A., Osborne, F. and Motta, E. (2021) Multiperspective Analysis of the Research Landscape using Semantic Technologies. Invited to "Predicting the Dynamics of Research Impact". Springer.

8. Salatino, A.A., Osborne, F. and Motta, E. (2020) Ontology Extraction and Usage in the Scholarly Knowledge Domain. Submitted to Applications and Practices in Ontology Design, Extraction, and Reasoning (Studies on the Semantic Web Series). IOS Press.
9. Carmagnola, F., Osborne, F. and Torre, I. (2013) Retrieval of Personal Public Data on Social Networks: The Risks for Privacy. *Social Network Engineering for Secure Web Data and Services* (pp. 137-160). IGI Global.

Journal Articles

10. Salatino, A.A., Osborne, F. and Motta, E. (2021) The CSO Classifier: Classifying Research Publications on a Large Scale Using Scientific Knowledge Graphs. Invited to special issue of the *International Journal on Digital Libraries (IJDL)* with the best papers from TPDL 2019 and TPDL 2020.
11. Angioni, S., Salatino, A.A., Osborne, F., Reforgiato Recupero, D. and Motta, E. (2021) AIDA: a Knowledge Graph about Research Dynamics in Academia and Industry. Submitted to Special issue on "Scientific Knowledge Graphs and Research Impact Assessment" at *Quantitative Science Studies Journal*.
12. Nayyeri, M., Muge Cila G., Sahar V., Osborne, F., Rahman, M., Angioni, S., Salatino, A., Reforgiato Recupero, D., Vassilyeva, N., Motta, E., Lehmann, J. (2020) Link Prediction of Scholarly Knowledge Graphs with Trans4E. Submitted to *Neurocomputing*.
13. Dessì, D., Osborne, F., Reforgiato Recupero, D., Buscaldi, D. and Motta, E. (2020) Generating Knowledge Graphs by Employing Natural Language Processing and Machine Learning Techniques within the Scholarly Domain. *Future Generation Computer Systems*.
14. Kirrane, S., Sabou, M., Fernández, J.D, Osborne, F., Robin, C., Buitelaar, P., Motta, E., Polleres, A. (2020) A decade of Semantic Web research through the lenses of a mixed methods approach. *Semantic Web Journal*.
15. Salatino, A.A., Thanapalasingam, T., Mannocci, A., Birukou, A., Osborne, F. and Motta, E. (2020) The Computer Science Ontology: A Comprehensive Automatically-Generated Taxonomy of Research Areas. *Data Intelligence*.
16. Mannocci, A., Osborne, F. and Motta, E. (2019) The Evolution of IJHCS and CHI: A Quantitative Analysis. *International Journal of Human-Computer Studies*.
17. Osborne, F., Muccini, H., Lago, P. and Motta, E. (2019) Reducing the Effort for Systematic Reviews in Software Engineering. *Data Science*.
18. Mannocci, A., Osborne, F. and Motta, E. (2019) Geographical trends in academic conferences: an analysis on authors' affiliations. *Data Science*.
19. Peroni, S., Osborne, F., Di Iorio, A., Nuzzolese, A.G., Poggi, F., Vitali, F. and Motta, E. (2017) Research Articles in Simplified HTML: a Web-first format for HTML-based scholarly articles. *PeerJ Computer Science*.
20. Salatino, A.A., Osborne, F. and Motta, E. (2017) How are Topics born? Understanding the Research Dynamics preceding the Emergence of new Areas. *PeerJ Computer Science*.
21. Likavec, S., Osborne, F. and Cena, F. (2016) Property-based semantic similarity and relatedness for improving recommendation accuracy and diversity. *International Journal on Semantic Web and Information Systems (IJSWIS)*, 11, 4, IGI Global.
22. Carmagnola, F., Osborne, F. and Torre, I. (2014) Escaping the Big Brother: An empirical study on factors influencing identification and information leakage on the Web. *Journal of Information Science*, 40(2), pp.180-197, SAGE.
23. Carmagnola, F., Osborne, F. and Torre, I. (2014) User data discovery and aggregation: The CS-UDD algorithm. *Information Sciences*, Elsevier.
24. Osborne, F. and Motta, E. (2013) Exploring Research Trends with Rexplore. *D-Lib Magazine* 19(9/10).
25. Cena, F., Likavec, S. and Osborne, F. (2013) Anisotropic propagation of user interests in ontology-based user models. *Information Sciences*, 250, pp.40-60., Elsevier.

Conference Contributions

26. Nayyeri, M., Muge Cila G., Sahar V., Osborne, F., Kravchenko, A., Angioni, S., Salatino, A., Reforgiato Recupero, D., Motta, E., Lehmann, J. (2021) Link Prediction using Numerical Weights for Knowledge Graph Completion within the Scholarly Domain. Submitted to ESWC 2021.
27. Dessì, D., Osborne, F., Reforgiato Recupero, D., Buscaldi, D. and Motta, E. (2020) AI-KG: an Automatically Generated Knowledge Graph of Artificial Intelligence. International Semantic Web Conference 2020, Athens, Greece.
28. Salatino, A.A., Osborne, F. and Motta, E. (2020) ResearchFlow: Understanding the Knowledge Flow between Academia and Industry. EKAW 2020, Lyon, France.
29. Bellatreche, L. et al. Databases and Information Systems in the AI Era: Contributions from ADBIS, TPD L and EDA 2020 Workshops and Doctoral Consortium. ADBIS/TPDL/EDA Workshops 2020.
30. Salatino, A.A., Thanapalasingam, T., Mannocci, A., Osborne, F. and Motta, E. (2019) Improving Editorial Workflow and Metadata Quality at Springer Nature. International Semantic Web Conference 2019, Auckland, New Zealand.
31. Salatino, A.A., Osborne, F., Thanapalasingam and Motta, E. (2019) The CSO Classifier: Ontology-Driven Detection of Research Topics in Scholarly Articles. In: TPD L 2019: 23rd International Conference on Theory and Practice of Digital Libraries.
32. Salatino, A.A., Thanapalasingam, T., Mannocci, A., Osborne, F. and Motta, E. (2018) The Computer Science Ontology: A Large-Scale Taxonomy of Research Areas, International Semantic Web Conference 2018, Monterey, CA (USA).
33. Thanapalasingam, T., Osborne, F., Birukou, A., and Motta, E. (2018) Ontology-Based Recommendation of Editorial Products, International Semantic Web Conference 2018, Monterey, CA (USA).
34. Osborne, F. and Motta, E. (2018) Pragmatic Ontology Evolution: Reconciling User Requirements and Application Performance, International Semantic Web Conference 2018, Monterey, CA (USA).
35. Salatino, A., Osborne, F. and Motta, E. (2018) AUGUR: Forecasting the Emergence of New Research Topics. ACM/IEEE Joint Conference on Digital Libraries 2018, Fort Worth, Texas, USA.
36. Wolfram, N., Lago, P. and Osborne, F. (2017) Sustainability in Software Engineering. SustainIT 2017. Funchal, Portugal.
37. Osborne, F., Mannocci, A. and Motta, E. (2017) Forecasting the Spreading of Technologies in Research Communities. K-CAP 2017, Austin, Texas, USA.
38. Osborne, F., Salatino, A., Birukou, A., Thanapalasingam, T., and Motta, E. (2017) Supporting Springer Nature Editors by means of Semantic Technologies. International Semantic Web Conference 2017, Industry Track. Vienna, Austria.
39. Cano-Basave, A. E., Osborne, F. and Salatino, A.A. (2016) Ontology Forecasting in Scientific Literature: Semantic Concepts Prediction based on Innovation-Adoption Priors. EKAW 2016, Bologna, Italy
40. Osborne, F., Ribaupierre, H., and Motta, E. (2016) TechMiner: Extracting Technologies from Academic Publications. EKAW 2016, Bologna, Italy
41. Osborne, F., Salatino, A., Birukou, A. and Motta, E. (2016) Automatic Classification of Springer Nature Proceedings with Smart Topic Miner. International Semantic Web Conference 2016, Kobe, Japan.
42. Osborne, F. and Motta, E. (2015) Klink-2: Integrating Multiple Web Sources to Generate Semantic Topic Networks. International Semantic Web Conference 2015, Bethlehem, Pennsylvania, USA.
43. Osborne, F., Scavo, G. and Motta, E. (2014) Identifying diachronic topic-based research communities by clustering shared research trajectories. Extended Semantic Web Conference 2014, Crete, Greece.
44. Osborne, F. and Motta, E. (2014) Understanding research dynamics. Extended Semantic Web Conference 2014, Crete, Greece. **[1st prize at the Semantic Publishing Challenge]**
45. Osborne, F. and Motta, E. (2014) Rexplore: Unveiling the Dynamics of Scholarly Data. Digital Library 2014, London, UK.

46. Osborne, F. and Motta, E. (2014) Inferring Semantic Relations by User Feedback. EKAW 2014, Linköping, Sweden.
47. Osborne, F., Scavo, G. and Motta, E. (2014) A Hybrid Semantic Approach to Building Dynamic Maps of Research Communities. EKAW 2014, Linköping, Sweden.
48. Chiabrando, E., Furnari, R., Likavec, S., Osborne, F., Picardi, C. and Dupré, D. (2014) TellEat: Sharing Experiences on the Move. HCI International 2014, Heraklion, Crete, Greece.
49. Osborne, F., Motta, E. and Mulholland, P. (2013) Exploring Scholarly Data with Rexplore. International Semantic Web Conference, Sydney, Australia
50. Osborne, F., Cena, F. and Likavec, S. (2013) Granular semantic user similarity in the presence of sparse data. AI*IA 2013, Turin, Italy.
51. Osborne, F. (2013) A POV-based user model: From learning preferences to learning personal ontologies. International Conference on User Modeling, Adaptation, and Personalization 2013, Rome, Italy.
52. Osborne, F. and Motta, E. (2012) Mining Semantic Relations between Research Areas. International Semantic Web Conference, Boston, MA, USA.
53. Cena, F., Likavec, S. and Osborne, F. (2012) Property-based interest propagation in ontology-based user model. International Conference on User Modeling, Adaptation, and Personalization 2012, Montreal, Canada.
54. Osborne, F. (2011) A new approach to social behavior simulation: the Mask Model. International Conference on Interactive Digital Storytelling 2011, Vancouver, Canada.
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