# 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/), which is widely recognised as one of the top international research groups in Scholarly Analytics. I have an MSc and a PhD in Computer Science from the University of Turin, Italy. My research covers Artificial Intelligence, Data Science, Big Data, Information Extraction, Knowledge Graphs, Science of Science, Semantic Web, Research Analytics, and Semantic Publishing. I have authored more than ninety peer-reviewed publications in top journals and conferences in my research areas, including the Semantic Web Journal, Neurocomputing, Future Generation Computer Systems, the International Journal of Human-Computer Studies, ISWC, ESWC, WebConf, JCDL, TPDL, and UMAP. I regularly organize scientific events and special issues on these topics. Most recently I chaired the Workshop on Scientific Knowledge (Sci-K at TheWebConf2021), the Workshop on Deep Learning for Knowledge Graphs (DL4KG at ISWC 2021), 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 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 Sorbonne Paris North 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).

The main objective of my work is supporting the paradigm shift towards Open Science by producing an open and machine-readable representation of scientific knowledge. This will enable a new generation of AI systems exploring and analysing the research literature at scale, informing funding decisions, and assisting researchers in formulating hypotheses, performing experiments, and sharing research outcomes. The techniques and software solutions produced by me and my team have been highly influential in this space. 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 adopted by Springer Nature (https://tinyurl.com/y5c92bxz) and several other organizations for annotating scientific documents and educational material. Building on this work, I designed the *Smart Topic Miner*, a tool for automatically annotating scientific publications that has been in routine use at Springer Nature since 2016. This solution brought a 75% cost reduction and dramatically improved the quality of the annotations, resulting in 12M additional downloads from the SpringerLink portal.

More recently, my research has focused on the automatic generation of large-scale knowledge graphs. In 2020, we released the *Artificial Intelligence Knowledge Graph* (http://w3id.org/aikg), a knowledge base that describes 850K methods, tasks, materials, and metrics automatically extracted from AI articles. 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.

## 1 HIGHER EDUCATION

**Degrees**

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| 2015 | PhD in Computer Science from the University of Torino, Italy. |
| 2010 | Master Degree in "Scienze della Comunicazione" (ICT) from the University of Torino, Italy. |

## 2 APPOINTMENTS AND EXPERIENCE

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| 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 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.

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| 2020-now | Co-supervising students for the Big Data course of the University of Cagliari. |
| 2020-now | Co-designed the prototype of the 'AI Module Guru', an innovative chatbot able to answer student questions about a course. |
| 2015-now | Regularly supervising master students in the context of internships and the Erasmus programme (see Section 4 of the CV). |
| 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:**

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| 2019-now | Angelo Salatino (Research Associate) |
| 2017-2019 | Thiviyan Thanapalasingam (Research Assistant), now PhD Student at the University of Amsterdam, Netherlands |

**Team Manager of:**

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| 2021 | Alessio Toscano (Developer) |

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| 2018-2019 | Hakan Ezgi Kızılöz (Visiting Researcher), now Research Associate at the University of Ankara, Turkey |
| 2017-2019 | Andrea Mannocci (Research Associate), now Research Associate at the National Research Council of Italy, Italy |
| 2016-2017 | Patrick Wang (Research Associate), now Associate Professor at ISEP, France |
| 2016-2017 | Carlo Allocca (Research Associate), now Data Scientist at Samsung, UK |
| 2016 | Aswin Sundaram (Developer) |
| 2015-2016 | Helene de Ribaupierre (Research Associate), now Lecturer at Cardiff University, UK |
| 2015-2016 | Giorgio Basile (Research Assistant), now Software Engineer at Planetek, Italy |

**Student Supervision:**

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|---|---|
| 2021-now | Anna Ermolayeva (Visiting PhD Student) |
| 2021-now | Agustín Borrego (Visiting PhD Student) |
| 2021-now | Joseph Kwarteng (Visiting Master Student) |
| 2021-now | Luca Secchi (Visiting PhD Student) |
| 2021-now | Antonello Meloni (Visiting Master Student and then Visiting PhD Student) |
| 2020-2021 | Mirco Serra (Visiting 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), now Postdoc Researcher at FIZ Karlsruhe, Germany |
| 2018 | Salvatore Zagaria (Visiting Master Student), now Software Development Engineer at VECTOR GB, UK |
| 2015-2019 | Angelo Salatino (PhD Student), now Research Associate at The Open University, UK |
| 2015 | Catia Prandi (Visiting PhD Student), now Assistant Professor at the University of Bologna, Italy |
| 2013-2014 | Giuseppe Scavo (Visiting Master Student), now Head of Development at Draw & Code, UK |

## 5 RESEARCH AND SCHOLARSHIP

**Research Interests**

Current research interests include Information Extraction, Knowledge Graph Generation, Research Analytics, Science of Science, Open Science, Artificial Intelligence, Knowledge Engineering, Semantic Web, and Semantic Publishing.

**Awards**

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| 2021 | Most Influential Scholar Award – Honorable Mention (AI2000 2021), Top 25 Worldwide Researcher in Knowledge Engineering - the Artificial Intelligence 2000 Most Influential Scholar List (http://kmi.open.ac.uk/news/article/19706). |
| 2020 | Best Demo Award at ISWC 2020. |
| 2020 | DataIQ Award Nominee 2020. |

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| 2020 | Finalist at the Springer Nature Innovation Competition 2020. |
| 2019 | Best Paper Award Nominee at ISWC 2019 (In-use), ISWC 2019 (Demo), and ISWC 2019 (Poster). |
| 2019 | Best Paper Award Nominee at TPDL 2019. |
| 2018 | Best Paper Award Nominee at ISWC 2018 (Resources) . |
| 2018 | Best Paper Award at SAVE-SD 2018. |
| 2014 | 1st prize at the Semantic Publishing Challenge at the European Semantic Web Conference 2014. |
| 2014 | Best Paper Award Nominee at ESWC 2014. |
| 2011 | Best Paper Award Nominee at ICIDS 2011. |
| 2011 | Best Project Award at SSSW 2011. |

**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

2021-now Co-Supervisor Agustín Borrego (Universidad de Sevilla, Spain)

2021-now Co-Supervisor of Anna Ermolayeva (Peoples Friendship University of Russia, Russia)

2021-now Co-Supervisor of Antonello Meloni (University of Cagliari, Italy)

2021-now Co-Supervisor of Luca Secchi (University of Cagliari, Italy)

2021-now Co-Supervisor of Simone Angioni (University of Cagliari, Italy)

2018-2020 Co-Supervisor of Danilo Dessì (University of Cagliari, Italy), now Postdoc Researcher at FIZ Karlsruhe, Germany

2015-2019 Main Supervisor of Angelo Salatino (The Open University, UK), now Research Associate at The Open University, UK

2015 Co-Supervisor of Catia Prandi (University of Bologna, Italy), now Assistant Professor at the University of Bologna, Italy

## 7 EXTERNAL ACADEMIC ACTIVITIES

### Membership of Government or other public committees

2020-now Knowledge Graph Construction W3C Community Group. We are creating the new W3C formats and tools for supporting the creation of knowledge graphs from heterogeneous big data sources. In particular, I am focusing on the generation of knowledge graphs from scientific documents.

2017-2019 Member of the Organisation for Economic Co-operation and Development (OECD) Expert Advisory Group. I provided large-scale analyses of research trends with the aim of informing decisions on funding allocation.

**External PhD Examinations**

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| 2021 | External Examiner of Carlos Badenes-Olmedo (Universidad Politécnica de Madrid, Spain) |
| 2020 | External Examiner of Giuseppe Futia (Politecnico di Torino, Italy). |
| 2019 | External Examiner of Danilo Dessì (University of Cagliari, Italy). |
| 2017 | External Examiner of Dario De Nart (University of Udine, Italy). |

**Internal PhD Examinations**

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| 2021 | Internal examiner for 1st year PhD VIVA of Paula Reyero-Lobo (The Open University, UK). |
| 2020 | Internal examiner for 1st year PhD VIVA of Kai Waddington (The Open University, UK). |
| 2019 | Internal examiner for 1st year PhD VIVA of Zeeshan Jan (The Open University, UK). |

**Academic editorial work**

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| 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 4$^{th}$ 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**

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|---|---|
| 2022 | Publicity Chair at ICWE 2022 |
| 2022 | Co-chair of the Knowledge Graphs Track at SAC 2022. |
| 2021 | Co-chair of Workshop on Deep Learning for Knowledge Graphs (DL4KG) at ISWC 2021. |
| 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 (RefResh) Workshop at SOCINFO 2020 |
| 2019-2020 | Co-chair of Workshop on Deep Learning for Knowledge Graphs (DL4KG) at ESWC. |
| 2019 | Co-chair of the Research of Research Track at ESWC. |

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| 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 (RefResh) 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**

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|---|---|
| 2021 | "Information Extraction for Knowledge Graph Generation", panelist talk at Workshop on Entity and Dataset Linking in Scientific Texts 2021, online (due to COVID-19). |
| 2021 | "Automatic Generation of Knowledge Graphs for Open Science", keynote at Data Intelligence and Knowledge Service Conference 2021, online (due to COVID-19). |
| 2021 | "The Generation of Scientific Knowledge Graphs", panelist talk at Second International Workshop on Knowledge Graph Construction at ESWC 2021, online (due to COVID-19). |
| 2020 | "Monitoring and Predicting the Impact of Scientific Conferences" at AI day of the Holtzbrinck Publishing Group, online (due to COVID-19). |
| 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.

**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, RefResh 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, ISWC 2021 (senior), KGCW 2021, SDP 2021, ACM SAC 2021, BiblioDAP 2021, SEMANTiCS 2021, K-CAP 2021, IJCKG 2021, ESWC 2022, ICWE 2022, TheWebConf 2022.

**Session chair**

ISWC 2019, ECAI 2020, ISWC 2020, ISWC 2021.

**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, Mathematical Biosciences and Engineering, Computers in Industry, EPJ Data Science, Knowledge and Information Systems, Information Processing and Management, Cognitive Systems, SoftwareX.

**Project Reviewer**

Croatian Science Foundation, Swiss National Science Foundation.

**Recent Technologies**

*Below I list the main software solutions designed and implemented by me or by my team under my supervision.*

2021-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-now **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.) (2021) Proceedings of the Workshop on Deep Learning for Knowledge Graphs (DL4KG2021) co-located with the International Semantic Web Conference 2021 (ISWC 2021), online, 2021. CEUR Workshop Proceedings, CEUR-WS.org 2021.
2. 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.
3. Gonzalez-Beltran, A., Osborne, F., and Vahdati, S. (eds.) (2020) Special Issue on Scholarly Data Analysis (Semantics, Analytics, Visualisation). Data Science.
4. 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.

5. 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.
6. 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.
7. 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**

8. Salatino, A.A., Mannocci, A. and Osborne, F. (2021) Detection, Analysis, and Prediction of Research Topics with Scientific Knowledge Graphs. Predicting the Dynamics of Research Impact. Springer.
9. Salatino, A.A., Osborne, F. and Motta, E. (2020) Ontology Extraction and Usage in the Scholarly Knowledge Domain. Applications and Practices in Ontology Design, Extraction, and Reasoning (Studies on the Semantic Web Series). IOS Press.
10. 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**

11. Meloni, A., Angioni, S., Salatino, A.A., Osborne, F., Reforgiato Recupero, D. and Motta, E. (2021) A General and Flexible Conversational Agent Architecture for Scholarly Knowledge Graphs Exploration. Submitted to Information Processing & Management.
12. Angioni, S., Salatino, A.A., Osborne, F., Reforgiato Recupero, D. and Motta, E. (2021) The AIDA Dashboard: a Web Application for Assessing and Comparing Scientific Conferences. Submitted to Expert Systems With Applications.
13. Manghi, P., Mannocci, M., Osborne, F., Sacharidis, D., Salatino, A., and Vergoulis, T. (2021) New Trends in Scientific Knowledge Graphs and Research Impact Assessment. Quantitative Science Studies. Advance Publication.
14. 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. Quantitative Science Studies Journal.
15. Nayyeri, M., Muge Cila G., Vahdati, S., Osborne, F., Kravchenko, A., Angioni, S., Salatino, A., Reforgiato Recupero, D., Motta, E., Lehmann, J. (2021) Link Prediction of Weighted Triples for Knowledge Graph Completion within the Scholarly Domain. IEEE Access.
16. Salatino, A.A., Osborne, F. and Motta, E. (2021) CSO Classifier 3.0: A Scalable Unsupervised Method for Classifying Documents in Terms of Research Topics. Special issue of the International Journal on Digital Libraries (IJDL) with the best papers from TPDL 2019 and TPDL 2020.
17. Nayyeri, M., Muge Cila G., Vahdati, S., Osborne, F., Rahman, M , Angioni, S., Salatino, A., Reforgiato Recupero, D., Vassilyeva, N., Motta, E., Lehmann, J. (2021) Trans4E: Link Prediction on Scholarly Knowledge Graphs. Neurocomputing.
18. Dessì, D., Osborne, F., Reforgiato Recupero, D., Buscaldi, D. and Motta, E. (2021) Generating Knowledge Graphs by Employing Natural Language Processing and Machine Learning Techniques within the Scholarly Domain. Future Generation Computer Systems.

19. 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.
20. 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.
21. Mannocci, A., Osborne, F. and Motta, E. (2019) The Evolution of IJHCS and CHI: A Quantitative Analysis. International Journal of Human-Computer Studies.
22. Osborne, F., Muccini, H., Lago, P. and Motta, E. (2019) Reducing the Effort for Systematic Reviews in Software Engineering. Data Science.
23. Mannocci, A., Osborne, F. and Motta, E. (2019) Geographical trends in academic conferences: an analysis on authors'affiliations. Data Science.
24. 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.
25. 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.
26. 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.
27. 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.
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**Conference Contributions**

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34. Bellatreche, L. et al. Databases and Information Systems in the AI Era: Contributions from ADBIS, TPDL and EDA 2020 Workshops and Doctoral Consortium. ADBIS/TPDL/EDA Workshops 2020.
35. 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.
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45. Osborne, F., Ribaupierre, H., and Motta, E. (2016) TechMiner: Extracting Technologies from Academic Publications. EKAW 2016, Bologna, Italy
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47. 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.
48. 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.
49. Osborne, F. and Motta, E. (2014) Understanding research dynamics. Extended Semantic Web Conference 2014, Crete, Greece. **[1st prize at the Semantic Publishing Challenge]**
50. Osborne, F. and Motta, E. (2014) Rexplore: Unveiling the Dynamics of Scholarly Data. Digital Library 2014, London, UK.
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55. Osborne, F., Cena, F. and Likavec, S. (2013) Granular semantic user similarity in the presence of sparse data. AI*IA 2013, Turin, Italy.
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57. Osborne, F. and Motta, E. (2012) Mining Semantic Relations between Research Areas. International Semantic Web Conference, Boston, MA, USA.
58. 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.

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60. Cena, F., Likavec, S. and Osborne, F. (2011) Propagating user interests in ontology-based user model. AI*IA 2011, Palermo, Italy.
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**Other works**

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63. Angioni, S., Salatino, A.A., Osborne, F., Reforgiato Recupero, D. and Motta, E. (2020) The AIDA Dashboard: Analysing Conferences with Semantic Technologies. International Semantic Web Conference 2020, Poster and Demo Track. **[Best demo award]**
64. Angioni, S., Salatino, A.A., Osborne, F., Recupero, D. and Motta, E. (2020) Integrating Knowledge Graphs for Analysing Academia and Industry Dynamics, 1st Workshop on Scientific Knowledge Graphs, Lyon, France.
65. Reforgiato Recupero, D., Dessi, D., Concas, E. and Osborne, F. (2019) Understanding Action Commands in Natural Language for Human-Robot Interaction: a Use Case with Zora. Submitted to European Conference on Ambient Intelligence 2019, Poster Track.
66. Bardaro, G., Dessi, D., Motta, E., Osborne, F. and Reforgiato Recupero, D. (2019) Parsing Natural Language Sentences into Robot Actions. International Semantic Web Conference 2019, Poster Track. Auckland, New Zealand.
67. Salatino, A., Osborne, F., Birukou, A. and Motta, E. (2019) Smart Topics Miner 2: Improving Springer Nature Editorial Workflow and Proceedings Retrievability. International Semantic Web Conference 2019, Poster Track. Auckland, New Zealand.
68. Angioni, S., Salatino, A., Osborne, F., Reforgiato Recupero, D. and Motta, E. (2019) The Trend Analysis Dashboard: a semantic tool for comparing the scientific output of Academia and Industry. International Semantic Web Conference 2019, Poster Track. Auckland, New Zealand.
69. Buscaldi, D., Dessì, D., Motta, E., Osborne, F. and Reforgiato Recupero, D. (2019) Mining Scholarly Data for Fine-Grained Knowledge Graph Construction. Workshop on Deep Learning for Knowledge Graphs 2019.
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71. Mannocci, A., Osborne, F. and Motta, E. (2018) Geographical Trends in Research Conferences: closed clubs or open houses? European Symposium on Societal Challenges in Computational Social Science. Cologne, Germany.
72. Salatino, A.A., Thanapalasingam, T., Mannocci, A., Osborne, F. and Motta, E. (2018) Classifying Research Papers with the Computer Science Ontology, International Semantic Web Conference 2018, Poster Track. Monterey, CA (USA).
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74. Mannocci, A., Osborne, F., and Motta, E. (2018) Geographical trends in research: a preliminary analysis on authors' affiliations. Workshop: SAVE-SD 2018 at The Web Conference, Lyon, France. **[Best paper award]**
75. Gonzalez-Beltran, Alejandra, Francesco Osborne, Silvio Peroni, and Sahar Vahdati. (2017) SAVE-SD 2017: Third Workshop on Semantics, Analytics and Visualisation: Enhancing Scholarly Data. In Proceedings of the 26th International Conference on World Wide Web Companion, pp. 1681-1682. International World Wide Web Conferences Steering Committee, 2017.

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79. Ribaupierre, H., Osborne, F. and Motta, E. (2016) Combining NLP and semantics for mining software technologies from research publications. Poster at World Wide Web 2016, Montreal, Canada.
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85. Osborne, F., Peroni, S. and Zhao, J. (2015) SAVE-SD 2015: First Workshop on Semantics, Analytics and Visualisation: Enhancing Scholarly Data. (2015) In Proceedings of the 24th International Conference on World Wide Web.
86. Osborne, F., Peroni, S. and Motta, E. (2014) Clustering Citation Distributions for Semantic Categorization and Citation Prediction. LISC 2014 at International Semantic Web Conference 2014, Riva Del Garda, Italy.
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88. Osborne, F. and Ruggeri, A. (2013) A prismatic cognitive layout for adapting ontologies. Poster at International Conference on User Modeling, Adaptation, and Personalization 2013, Rome, Italy.
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