# Knowledge Graphs for Scientific Discovery: Opportunities and Challenges

##### Invited Speaker

In the last few years, we have witnessed a paradigm shift towards Open Science, greatly increasing the availability of scientific articles in online repositories. The opportunity has been seized by the AI community, who proposed several new solutions for extracting, representing, and analysing scientific knowledge. The resulting knowledge graphs can pave the way for a new generation of AI systems able to reason on this knowledge and assist the work of scientists by suggesting relevant literature, generating novel hypotheses, and performing large-scale experiments. The recent emergence of Large Language Models has further accelerated this progress, enabling question-answering capabilities on massive amounts of text, but also introducing new challenges regarding the verifiability and accuracy of the resulting information.

The ultimate objective is to leverage the synergy between AI and Knowledge Graphs to enhance the efficiency, accessibility, and scalability of the scientific process. This is particularly crucial when tackling the fundamental challenges of our time, such as clean growth, poverty, and inequality, which demand the integration of resources and insights from diverse disciplines.

In this talk, I will describe recent advancements in this field, present recent resources, such as the Computer Science Knowledge Graph, and discuss the open challenges.

## Speaker

| Francesco OsborneHead Scientist at Meta Reality Lab | Francesco Osborne is Senior Research Fellow at the Knowledge Media Institute, The Open University (UK), where he leads the Scholarly Knowledge Mining team (<http://skm.kmi.open.ac.uk>). He authored more than a hundred peer-reviewed publications in the fields of Artificial Intelligence, Information Extraction, Knowledge Graphs, Science of Science, and Research Analytics. He is on the editorial board of several journals in these fields and regularly organizes workshops and conference tracks. He collaborated with major international publishers (Springer Nature, Elsevier) with the aim of generating new intelligence solutions for analysing research literature. He produced many resources for Open Science, including the Computer Science Ontology (<http://cso.kmi.open.ac.uk>), the CS Knowledge Graph (<http://w3id.org/cskg>), and the AIDA Knowledge Graph (<http://w3id.org/aida>). |
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