



Tommaso Soru

Data Scientist, Researcher

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I'm an AI enthusiast with the dream of giving my small contribution to the quest for intelligence. My research topics include Entity Resolution, Link Prediction, and Question Answering on Knowledge Graphs, with a focus on the Semantic Web.

EXPERIENCE

Data Lens Ltd. (formerly Semantic Integration Ltd.), London, UK

DATA SCIENTIST > SEPTEMBER 2019 – PRESENT

- NLP Pipeline for scalable Information Extraction from unstructured data. **Java, AWS, Docker**
- Development of an algorithm for Named Entity Recognition and Linking. **Python, spaCy, RDF(S), SPARQL**

DATA SCIENTIST & ARCHITECT > NOVEMBER 2018 – AUGUST 2019

- Design & implementation of a semantic reasoner. **Node.js, SPARQL**
- Design of a semantic data architecture for RDF graph virtualisation of relational databases. **Python, RDF(S), SPARQL, AWS, Docker**

DBpedia Association, Leipzig, Germany

ORGANISATION ADMIN (REMOTE) > JANUARY 2019 – PRESENT

- Org Admin for [Google Summer of Code](#) (GSoC) at [DBpedia](#), a Multilingual Semantic Knowledge Graph.

MENTOR (REMOTE) > FEBRUARY 2017 – PRESENT

- Mentored 6 students on the open-source projects "Knowledge Base Embeddings for DBpedia" and "A Neural Question Answering Model for DBpedia". **Python, TensorFlow, Keras, RDF(S), SPARQL**

Liber AI Ltd., London, UK

CO-FOUNDER, RESEARCHER > OCTOBER 2017 – PRESENT

- Open-source research project [Neural SPARQL Machines](#): Question Answering over Knowledge Graphs using Recurrent Neural Networks (110+ stars and 70+ forks on GitHub). **Python, TensorFlow**

AKSW, University of Leipzig, Leipzig, Germany

DOCTORAL RESEARCHER > JULY 2012 – OCTOBER 2018

- PhD thesis titled "Metric Learning for Link Discovery" under the supervision of [Prof. Dr. Axel Ngonga](#).
- R&D of two scalable methods for Link Prediction in directed graphs using rule mining and Markov logic. **Python, Java, SPARQL, RDF(S)**
- Design and development of [ROCKER](#), algorithm for RDF Key Discovery, and its web-based GUI. **Java, MySQL, RDF(S), AWS, JS, Docker**
- Realisation of a scalable Knowledge Graph Embedding approach. **Python, Gensim, Keras**
- Application of Machine Learning techniques (SVMs, MLP) for Entity Resolution. **Java, Weka ML**
- Development of [LinkLion](#), a portal for Link Discovery. **JSP, OWL, SPARQL**
- Contributor of [LIMES](#) 1.0, a Link Discovery framework. **Java, RDF(S)**
- Contributor of [ML-Schema](#), an ontology for ML experiments. **Java, RDF(S), OWL**

BuzzTweet, Berlin, Germany

LEAD DEVELOPER > APRIL 2015 – JUNE 2017

- Design and development of a real-time Sentiment Analysis framework. **Java, Weka ML, AWS, Docker**

GroopLab srl, Berlin, Germany

DATA SCIENTIST, SHAREHOLDER > JUNE 2014 – JUNE 2015

- Development of Machine-Learning methods for the categorisation and recommendation of events by type and music genre, as well as a Named Entity Recognition technique to identify artist names in texts. **Python, scikit-learn, Java, Weka ML, AWS**

EDUCATION

University of Leipzig, Leipzig, Germany

PHD IN COMPUTER SCIENCE > JULY 2012 – PRESENT (EXPECTED 2020)

University of Milan-Bicocca, Milan, Italy

MASTER OF SCIENCE IN ARTIFICIAL INTELLIGENCE > NOVEMBER 2008 – MARCH 2012

- "Semi-automated identification of Italian lemmas using multilingual WordNet" **Java, CoreNLP, RDF(S)**
- "Topologies comparison in a Public Goods Game" and others. **Java, C++, Repast, OpenCV**

Polytechnic of Milan, Milan, Italy

BACHELOR IN COMPUTER ENGINEERING > SEPTEMBER 2003 – SEPTEMBER 2008

- "A Geographic Ontology for a Semantic Wiki", "RDF-based Settlers of Catan". **Java, RDF(S), OWL**

SELECTED PUBLICATIONS & AWARDS

Faisal Alshargi, Saeedeh Shekarpour, **Tommaso Soru**, Amit P. Sheth, [Metrics for Evaluating Quality of Embeddings for Ontological Concepts](#). In proceedings, AAI-MAKE Symposium, 2019.

Diego Moussallem, **Tommaso Soru**, Axel Ngonga, [Neural Translation and Enrichment of Knowledge Graphs](#). In proceedings, ISWC, 2019.

Muhammad Saleem, Alexander Potocki, **Tommaso Soru**, Olaf Hartig, Axel Ngonga, [CostFed: Cost-Based Query Optimization for SPARQL Endpoint Federation](#). In proceedings, SEMANTICS, 2018. **Best paper award**

André Valdestilhas, **Tommaso Soru**, Markus Nentwig, Edgard Marx, Muhammad Saleem, Axel Ngonga, [Where is My URI?](#). In proceedings, ESWC, 2018. **Honourable mention**

Tommaso Soru, Edgard Marx, André Valdestilhas, Diego Esteves, Diego Moussallem, Gustavo Publio, [Neural Machine Translation for Query Construction and Composition](#). ICML NAMPI Workshop, 2018.

Tommaso Soru, André Valdestilhas, Edgard Marx, Axel-Cyrille Ngonga Ngomo, [Beyond Markov Logic: Efficient Mining of Prediction Rules in Large Graphs](#). Preprint, 2018.

Edgard Marx, **Tommaso Soru**, André Valdestilhas, [Triple Scoring Using a Hybrid Fact Validation Approach](#). In proceedings, WSDM Cup Workshop, 2017. **Ranked 4th out of 33 participants**

Tommaso Soru, Edgard Marx, Diego Moussallem, Gustavo Publio, André Valdestilhas, Diego Esteves, Ciro Baron Neto, [SPARQL as a Foreign Language](#). SEMANTiCS, 2017. **Best poster nominee**

Tommaso Soru, Edgard Marx, Axel Ngonga, [ROCKER: A Refinement Operator for Key Discovery](#). In proceedings, WWW, 2015. **14% acceptance rate**

Tommaso Soru, Axel Ngonga, [A comparison of supervised learning classifiers for link discovery](#). In proceedings, SEMANTiCS, 2014.

Tommaso Soru, [Learning Metrics for Link Discovery](#). ESWC Summer School, 2013. **Best poster award.**

ABOUT ME

- Team player. Self-starter. Lateral thinker.
- [Drummer](#). 200+ live shows, 3 albums and 3 EPs published.
- Languages: Italian (native), English (full proficiency), French & German (basic).
- Interests: AI singularity, progressive music, genealogy, quantified self, association football, science fiction.