



Shuai Wang

Ph.D. candidate in A.I.

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Education

06/2017 - 05/2022

Ph.D. Artificial Intelligence

Vrije Universiteit Amsterdam (VU)

Linked Data ■ Knowledge Graph ■ Refinement ■ Hybrid Algorithms.

09/2015 - 08/2017

MSc Logic (computation track)

University of Amsterdam (UvA)

Knowledge Representation ■ Information Theory ■ Dynamic Epistemic Logic ■ Machine Learning.

08/2012 - 07/2014

BSc Artificial Intelligence (first class ≈ cum laude)

University of Manchester

Machine Learning ■ Verified Development ■ Natural Language Processing ■ Algorithms.

Biography

I am Shuai and I am working towards the end of my Ph.D. in Artificial Intelligence with a focus on linked open data/knowledge graphs. I am familiar with logic-based inference and automated reasoning, linked data analysis and refinement, etc.

Work experience

Researcher (Scientific Engineer)

2022 - present

Vrije Universiteit Amsterdam, the Netherlands.

Vrije Universiteit

Since June 2022, I work as a research engineer at the User-Centric Data Science group. I work with Prof. Tobias Kuhn in the project "Building a FAIR Expertise Hub for the social sciences" and I am involved in the ODISSEI infrastructure initiative. Moreover, I work closely with social scientists in Amsterdam and Rotterdam.

PhD researcher

2017 - 2022

Vrije Universiteit Amsterdam, the Netherlands.

Vrije Universiteit; funded by NWO

I performed some comprehensive analysis of very large integrated knowledge graphs; developed hybrid refinement algorithms at web scale. I have published papers at top A.I. conference venues such as ESWC. I have also been a teaching assistant for Deep Learning, Intelligent Systems and A.I. in Health, etc.

Research internship (4 months)

Summer 2016 LAAS-CNRS, the Aerospace Valley, Toulouse, France.

LAAS-CNRS ≈ the French equivalent of TNO

I completed a research internship in the robotics group where I studied taking robots out of a crashed airplane.

Research internship (6 months)

Spring-Summer 2015 French National Institute for Research in Computer Science and Automation (INRIA Paris-Rocquencourt), Paris, France.

INRIA ≈ the French equivalent of CWI

I transformed a large set of proofs by loading into a modified reasoner. The transformed proofs were checked using a specific program.

Professional Skills

- Linked Data Analysis/Management: linked (open) data, large scale knowledge graph, ontology analysis, data integration, alignment, data validation and refinement, data/knowledge management, knowledge engineering, etc.
- Graph analysis: graph features analysis, cycle resolving (feedback arc set), evaluation matrices, centrality, etc.
- Machine Learning: behavior learning, Deep Learning (Graph Convolutional Networks, Recurrent Neural Networks), Turing Learning, etc.
- Natural Language Processing and Human-Agent Interaction: chatbot, entity understanding and alignment.

Teaching

- Deep Learning (2021), second year MSc A.I. and MSc Business Analytics, VU.
- A.I. in Health (2020), MSc A.I., VU&WUST (online).
- Intelligent Systems (2020), first year BSc A.I., VU.
- Knowledge Representation (2017), first year MSc A.I., VU.

Supervision

- Bachelor Thesis:
I was involved in the supervision of 5 bachelor students.
- Master Thesis:
I was involved in the supervision of 3 master students.

Honors

- ▶ Doctoral Grant (by NWO TOP)
- ▶ MPRI-INRIA scholarship

Languages

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|---------|--------|
| Chinese | Native |
| English | C1 |
| French | A2-B1 |
| Dutch | A1-A2 |

Interests

- ▶ Artist (with 2 exhibitions)
- ▶ Cello (electric Cello student)
- ▶ Taekwondo (red belt)
- ▶ Travelling (15 countries)

- Data Visualisation & communication: statistical analysis and visualisation.
- Software Engineering: agile development, modelling, project management, etc.
- Mathematics: statistics, probability, linear algebra, matrices and tensors, etc.
- Logic: SAT/SMT solving, automated reasoning, first/higher order logic, verification and proof checking, etc.

Technical Skills

Generic Tools and Platforms

- Platforms: TensorFlow, PyTorch, Django, Heroku, etc.
- Programming Languages: Python, OCaml, C++, Java, etc.
- Utilities and Tools: Atom, Protégé, Github, Jupyter Notebook, etc.

Tools and Utilities for Data/Knowledge Graphs

- Data Processing: pandas, numpy, networkx, scipy, pymetis, Google Sheets, etc.
- Data Query: SPARQL, PyHDT, rdflib, etc.
- Data Formats: CSV, HDT, RDF (Turtle, N-Triples, OWL), XML, JSON, Web-Graph, FASTA/BPSEQ, OpenTheory, Dedukti, etc.
- Data Publishing: TriplyDB, Zenodo, etc.

Tools for Modelling, Simulation, and Agent Systems

- Modelling and Visualisation: Blender, Matplotlib, CSS/HTML, JavaScript, Google Map/Slides, \LaTeX , Prezi, etc.
- Simulation: ENKI, HPP, Netlogo, etc.
- Hardware: Raspberry Pi, Leap Motion, etc.
- Interaction: Bluemix Conversation API (IBM Watson), etc.

Recent Publications

- S. Wang, "On the Analysis of Large Integrated Knowledge Graphs for Economics, Banking, and Finance". in *International Workshop on Knowledge Graphs for Economics and Finance*, 2022.
- S. Wang, J. Raad, P. Bloem, and F. van Harmelen, "Refining transitive and pseudo-transitive relations at web scale". in *Proceedings of 18th European Semantic Web Conference (ESWC)*, 2021.
- S. Wang, J. Raad, P. Bloem, and F. van Harmelen, "Submassive : Resolving subclass cycles in very large knowledge graphs," in *2nd Workshop on Large Scale RDF Analytics (LASCAR@ESWC)*, 2020.
- G. Lan, L. de Vries, S. Wang "Evolving Efficient Deep Neural Networks for Real-time Object Recognition" in *IEEE Symposium Series on Computational Intelligence (SSCI)*, 2019.
- S. de Bever, D. Formolo, S. Wang, T. Bosse "A multimodal chatbot system for enhancing social skills training for security guards" in *International Conference on Human-Computer Interaction*, 2019.

Under Submission

- S. Wang, J. Raad, P. Bloem, and F. van Harmelen, "Refining Large Integrated Identity Graphs using the Unique Name Assumption". in *under submission at EKAW*, 2022.

Updated on 21st March 2022

Visit <https://shuai.ai> for more details.