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)

Multi-agent Systems ▪ Information Theory ▪ Machine Learning.

08/2012 - 07/2014

BSc Artificial Intelligence (first class ≈ cum laude)

University of Manchester

Machine Learning ▪ Game Theory ▪ 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 data analysis, refinement, visualisation, and machine learning.

Work experience

Research assistant | Teaching assistant — **Vrije Universiteit; funded by NWO**

2017 - present (4.5 years)
Vrije Universiteit Amsterdam, the Netherlands.

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) — **LAAS-CNRS ≈ the French equivalent of TNO**

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

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

Research internship (6 months) — **INRIA ≈ the French equivalent of CWI**

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

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, etc.
- Machine Learning: behavior learning, Deep Learning (Graph Convolutional Networks, Recurrent Neural Networks), Turing Learning, topology of neural networks, etc.
- Natural Language Processing and Human-Agent Interaction: chatbot, entity understanding and alignment.
- 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.

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.
- Bachelor Thesis: Tico van der Laan (2018, VU) and Stein de Bever (2018, VU)
- Master Thesis: Lucas de Vries (2018, UvA)

Honors

- NWO TOP Grant (for Ph.D.)
- MPRI-INRIA scholarship

Languages

Chinese	Native
English	C1
French	A2-B1
Dutch	A2

Interests

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

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, WebGraph, 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.

Research Output

Recent Publications

- S. Wang, "On the Analysis of Large Integrated Knowledge Graphs for Economics, Banking, and Finance". in *under submission*, 2022.
- S. Wang, J. Raad, P. Bloem, and F. van Harmelen, "Refining Large Integrated Identity Graphs using the Unique Name Assumption". in *under submission*, 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)*, 2020.
- G Lan, L de Vries, S Wang "Evolving Efficient Deep Neural Networks for Real-time Object Recognition" in *2019 IEEE Symposium Series on Computational Intelligence*, 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.

References

- Prof. Frank van Harmelen (Professor of Artificial Intelligence)
  Vrije Universiteit Amsterdam
  frank.van.harmelen@vu.nl
- Prof. Peter Bloem (Assistant Professor of Artificial Intelligence)
  Vrije Universiteit Amsterdam
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Visit `https://shuai.ai` for more details.