Luisa Werner

PhD Candidate in Neuro-Symbolic Integration

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 /luisawerner.github.io   in /luisa-werner

🎓 Education

PhD Candidate at Université Grenoble Alpes & INRIA   2020 – December 2024
on Neuro-Symbolic Integration on Knowledge Graphs, supervised by Nabil Layaïda   *Grenoble, France*

Master of Science at Karlsruhe Institute of Technology   2017 – 2020
in Computer Science   *Karlsruhe, Germany*

in Bachelor of Sciene at Karlsruhe Institute of Technology   2013 – 2017
Economics Engineering   *Karlsruhe, Germany*

💼 Research

Knowledge Enhanced Graph Neural Networks ○   June 2023
Python, Pytorch, Pytorch Geometric, Matplotlib, Weights&Biases   *Grenoble, France*
Developed the neuro-symbolic approach *KeGNN* which stacks differentiable Knowledge
Enhancement Layers onto Graph Neural Networks to incorporate prior knowledge

[Accepted paper the KBCG Workshop @IJCAI 2023]

What Does It Take to Reproduce Experiments? - Evidences from the Neuro-Symbolic Domain ○   May 2023
Python, Pytorch, Pytorch Geometric, Matplotlib, Weights&Biases   *Grenoble, France*
Provided a progressive methodology of reproducing, replicating and expanding experiments

Scalable Knowledge Enhancement of Graph Neural Networks ○   September 2022
Python, Pytorch, Pytorch Geometric, Matplotlib, Weights&Biases   *Grenoble, France*
Extended the concepts of Knowledge Enhanced Neural Networks to large-scale graphs

Predictive Analytics by Inferring Structure from Electronic Health Records 🌐   November 2019 - March 2020
Python, Tensorflow, Keras, Numpy, SQL   *Grenoble, France*
Research internship supervised by Pierre Genevès (Tyrex, INRIA) and Paula Breitling (TECO, KIT)

Applied Graph Convolutional Transformer to find structural embeddings of electronic health records

Econometric Analysis of RECIPROC® in Endodontics 🌐   October – March 2016
R, Excel   *Karlsruhe, Germany*
Bachelorthesis supervised bei Dr. Prof. Melanie Schienle (ECON, KIT)

Studied statistically the efficacy of the RECIPROC® treatment method based on historical patient data

[Published paper: PeerJ 8:e8495]

💼 Work Experience

Deutsche Bundesbank (German Central Bank)   November 2018 – March 2019
Python, SQL   *Frankfurt, Germany*
Supported the development of a financial database with machine learning applications

💬 Talks and Attended Conferences

Talk at PhD Forum of ECML-PKDD   September 2022
on Neuro-Symbolic Integration on Knowledge Graphs   *Grenoble, France*

Talk at Toulouse 3AI Workshop   November 2021
on Neuro-Symbolic Integration - Bridging the Gap between Neural Networks and Logic   *Toulouse, France*

⚙ Skills

Research Interests   Neuro-Symbolic Integration, Knowledge Graphs, Graph Neural Networks, Ontologies, Fuzzy Logic

Programming Languages   Python, R, SQL, Java, HTML, Latex

Deep Learning Frameworks   PyTorch, PyTorch Geometric, Tensorflow, Keras, Numpy, Matplotlib, Weights&Biases

Languages   Fluent in English, German and French

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🏆 Awards and Scholarships

Best Second Year PhD Presentation @ MIAI Days   December 2022
MIA (Multidisciplinary Institute of Articificial Intelligence)

Scholar of Bosch Female Talents @ KIT   2018 – 2019
A scholarship of the company Bosch, which supports the career development of excellent female students at KIT

🎮 Other Achievements

Female Winner of the Atlas Mountain Race   February 2023
The Atlas Mountain Race is a 1300 km long self-supported bikepacking race through Marocco.

7th at the U23 World Rowing Championships   September 2016
in the boat category Lightweight Women Single Scull

Bronze Medal at the U23 World Rowing Championships   July 2015
in the boat category Lightweight Women Quadruple Scull