



Marvin Koß

Education

- 2008–2016 **High School**, *Gymnasium Oedeme*, Lüneburg.
Abiturnote 2.1
- 2016–2017 **Universität Siegen**, *Computer Science*, towards *B.S.*
transferred to Heidelberg University
- since 2017 **Ruprecht-Karls-Universität Heidelberg**, *Computational Linguistics*, towards *B.A.*
curr. GPA 1.3
- 2022–2024 **Ruprecht-Karls-Universität Heidelberg**, *Mathematics*, *B.Sc.*
GPA 2.1

Academic Employment

Webmaster	at ICL , (04/19-04/20)	Tasks	Website Maintenance and Development
Research Assistant	at ZITI , (11/20-10/22)	Tasks	Development of a tool for Neural Network Quantization in the DeepChip Project ; UQ using BNNs (slides)
Research Assistant	at IWR , (01/23-09/23), 80h	Tasks	Analyzing a Novel Particle-Based Optimizer from a Mean-Field Perspective (Preprint)
Research Assistant	at IWR , (04/24-09/24), 80h	Tasks	Developing a Novel Particle-Based Optimizer (Code)

Publications

- arXiv Preprint** [On the mean field limit of consensus based methods](#)

Academic Teaching

Teaching Assistant Formal Mathematical Foundations for Computational Linguists, SS 2018

Teaching Assistant Formal and Computational Semantics, WS 2018

Tasks Convey mathematical basics and proof techniques to students and grade exercises

Tasks Give tutorials, create python assignments, give some lectures, grade exercises

Other Employment

Working Student at Sovanta, (01/23-04/23)

Tasks An Image-to-Text Pipeline

Private Tutor at Lerncenter HD, (09/23-07/24)

Tasks Math Coaching

Volunteer Work

At the Heidelberg CoLi Fachschaft
Helper at ESSLLI 2018, Bulgaria

Languages

German Native

English Fluent

Russian Basic

C1

Programming Languages

Python 7 years of Experience

numpy, pytorch, pyro, sklearn, keras, spaCy, nltk, tensorflow, HF transformers

Java Basic Knowledge

C++ Basic Knowledge

SQL Basic Knowledge

example project

Example Coursework Projects

B.Sc. Thesis Mean-Field Particle Swarm Optimization

thesis Prof. Dr. Jakob Zech

B.A. Thesis Extended Key-Value Retrieval Networks

code, thesis Prof. Dr. A. Sokolov

Project Corpus linguistical investigation of a word cluster

R. Perkuhn

Project Hierarchical Dirichlet Processes for WSI

Dr. V. Nastase, Dr. M. Herweg

Project Pragmatic Modelling Of Utterances Using First Order Logic Semantic Representations

report Dr. M. Herweg

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🌐 www.cl.uni-heidelberg.de/koss/ • 🗣 [marvosyntactical](https://github.com/marvosyntactical)

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Project Global Normalization for Machine Translation

Prof. Dr. A. Sokolov

Project Unsupervised NMT

Prof. Dr. S. Riezler

Side Projects

Voice Assistant Modular Home Assistant Connected to ChatGPT

code

Pragmatics Workshops I give using my Pyro
Workshops Port of www.problang.org

slides, code

Academic Interests

Narratives And how they connect reinforcement learning and linguistics

blog post

AI Alignment How can we align AGI with our values?

Unc. Quant. e.g. in BNNs

Mean Field Analyses of Particle Systems

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