Marvin Koß

Education

2004–2008	**Elementary School**, *GS Häcklingen*, Lüneburg.	
2008–2016	**High School**, *Gymnasium Oedeme*, Lüneburg.	
2016–2017	**Universität Siegen**, *Computer Science, towards B.S.*	
	transferred to Heidelberg University	
since 2017	**Ruprecht-Karls-Universität Heidelberg**, *Computational Linguistics, towards B.A.*	
since 2022	**Ruprecht-Karls-Universität Heidelberg**, *Mathematics, towards B.Sc.*	

Languages

German	Native	
English	Fluent	*C1*
Russian	Basic	

Programming Languages

Python	5 years of Experience	numpy, pytorch, pyro, sklearn, keras, spaCy, nltk
Java	Basic Knowledge	
C++	Basic Knowledge	example project
SQL	Basic Knowledge	

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

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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
Extracurr.	Sprachreflexion (Reflecting on Language), German Seminar		D. Wielenberg, Uni Hildesheim
Project	Global Normalization for Machine Translation		Prof. Dr. A. Sokolov
Project	Unsupervised NMT		Prof. Dr. S. Riezler

Teaching

TA	Formal Mathematical Foundations for Computational Linguists, SS 2018	**Tasks**	convey mathematical basics and proof techniques to students and grade exercises
TA	Formal and Computational Semantics, WS 2018	**Tasks**	give tutorials, create python assignments, give some lectures, grade exercises

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; Visualisation of UQ using BNNs (slides)
Research Assistant	at IWR, (01/23-03/23)	Tasks	Analyzing a Novel Particle-Based Optimizer from a Mean-Field Perspective

Organisational

Volunteer Work at Heidelberg CoLi Fachschaft

Helper at ESSLLI 2018, Bulgaria

Side Projects

Voice Assistant	Modular Home Assistant Connected to `ChatGPT`	code
Pragmatics Workshops	Short Workshops I give using a Pyro Port of www.problang.org	slides, code

Academic Interests

Narratives	And how they connect reinforcement learning and linguistics	blog post

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AI Alignment	How can we align AGI with our values?
UQ	In BNNs, Inverse Problems
MF	Analyses of Particle Systems

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