

Dr. Ruth Schäfer

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Senior research software engineer with 3+ years building production ML systems—speech processing, video analysis, and LLM-powered applications. Physics PhD with a BS in Computer Science. Translates research into shipped products, collaborates with academic partners, and owns the full ML lifecycle from prototype to production.

EXPERIENCE

Senior Research Software Engineer

JAN 2023 – PRESENT

Saga Education (*Remote, USA*)

- Developed and deployed three LLM-powered professional development tools serving 500+ users: automated analysis identifying strengths and growth areas from session transcripts, personalized recommendations that outperform generic guidance in user feedback, and an interactive chatbot for practice scenarios with contextual feedback
- Built multimodal ML pipeline processing 1500+ hours of recordings weekly: speech-to-text, speaker diarization, and synchronized video compositing deployed on AWS with fault-tolerant orchestration
- Technical liaison for multi-university research partnerships (CU Boulder, CMU, and others); integrated academic ML outputs into production dashboards and negotiated data schemas for ongoing collaborations
- Own end-to-end ML system lifecycle: prompt engineering and iteration, model selection, API integration, cloud deployment, and production observability
- Maintain shared Python libraries and internal APIs connecting research and product systems, ensuring consistent data access across heterogeneous compute (Lambda, ECS, Batch)

Graduate Research Fellow

OCT 2019 – OCT 2022

Heidelberg University (*Heidelberg, Germany*)

- Developed data analysis software in Python, Mathematica, and C++, laying theoretical and computational foundation for an ongoing experiment at the Belle II particle detector
- Published 7 papers on novel research (InspireHEP: [R.Schaefer.5](#)); presented at 14 international conferences to audiences of up to 100
- Mentored undergraduate and Masters students on research projects; collaborated with international teams of up to 20 researchers

EDUCATION

Ph. D.	–	Theoretical Particle Physics (<i>Heidelberg University, Germany</i>)	OCT 2019 – OCT 2022
M. Sc.	–	Physics (<i>Heidelberg University, Germany</i>)	OCT 2017 – SEP 2019
B. Sc.	–	Physics (<i>Münster University, Germany</i>)	APR 2014 – SEP 2017
B. Sc.	–	Computer Science (<i>Münster University, Germany</i>)	OCT 2013 – SEP 2016

TECHNICAL SKILLS

AI/ML: OpenAI API, Whisper, pyannote.audio, PyTorch, prompt engineering

Languages: Python (expert), C++, JavaScript/TypeScript, Wolfram Mathematica

Cloud: AWS (compute, orchestration, observability, IaC), Docker, GitHub Actions

Media & Data: ffmpeg, MongoDB, MySQL, GraphQL

LANGUAGES

Like Native: German, English

Intermediate: Spanish, Swedish