

# Dr. Ruth Schäfer

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Research Engineer with 3+ years of experience building production AI/ML pipelines and cloud infrastructure. Physics PhD with a BS in Computer Science. Adept at translating complex requirements into scalable systems, collaborating across technical and non-technical teams, and owning projects from design through deployment.

## EXPERIENCE

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### Research Engineer, Renaissance Philanthropy Engineering Hub

MAR 2026 – PRESENT

Renaissance Philanthropy (*Remote, USA*)

- Developed a WhatsApp-based feedback service for teachers seeking to improve their lessons using LLM responses grounded in pedagogy and cloud-based orchestration.
- Built the infrastructure to move a multimodal transcription process to an automated cloud-based pipeline for an ed-tech platform.
- Conducted interviews for hiring and grant selection

### Senior Research Software Engineer

JAN 2023 – FEB 2026

Saga Education (*Remote, USA*)

- Built audio-video processing pipeline from prototype to production on AWS, now processing 5,000+ tutoring sessions weekly with same-day transcription and speaker diarization (Whisper, pyannote.audio) and composite video generation
- Developed three LLM-powered coaching tools serving 100+ tutors: automated session analysis identifying pedagogical strengths and growth areas, personalized pre-session tips that outperform generic guidance, and an interactive chatbot for practice scenarios and mentor-style feedback
- Served as technical liaison for multi-university research partnerships (CU Boulder, UMN, CMU)
- Owned integration points across stacks, maintaining shared libraries, CI/CD, and observability

### Graduate Research Fellow

OCT 2019 – OCT 2022

Heidelberg University (*Heidelberg, Germany*)

- Developed particle data analysis software in Python, Mathematica, and C++
- Published 7 papers on novel research in particle physics phenomenology (InspireHEP: [R.Schaefer.5](#))
- Collaborated with international teams; mentored undergraduate and Masters students

## EDUCATION

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**Ph. D.** – **Theoretical Particle Physics** (*Heidelberg University, Germany*) OCT 2019 – OCT 2022

**M. Sc.** – **Physics** (*Heidelberg University, Germany*) OCT 2017 – SEP 2019

**B. Sc.** – **Physics** (*Münster University, Germany*) APR 2014 – SEP 2017

**B. Sc.** – **Computer Science** (*Münster University, Germany*) OCT 2013 – SEP 2016

## TECHNICAL SKILLS

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**Programming Languages:** Python (expert), C++, JavaScript/TypeScript

**Cloud & Infrastructure:** AWS (compute, orchestration, observability, CloudFormation), Azure, Docker, GitHub Actions

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

**Tools & Databases:** git, ffmpeg, GraphQL, MongoDB, MySQL, GNU/Linux

**Scientific Computing:** LaTeX, Wolfram Mathematica, LabVIEW

## LANGUAGES

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**Like Native:** German, English

**Intermediate:** Spanish, Swedish