

Zhijie Zhao

Resume



Personal Data

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Nationality Chinese
Birthday 02.10.1988

Professional Experience

- 02/2025 - Today **Junior Scientist**, *Henan Normal University*, Xinxiang, China
- I am interested in implementing Machine Learning Models to the research of particle physics.
 - I gave a lecture for Monte-Carlo techniques and the applications of Machine Learning.
 - I am building a AI Research Assistant for my research field: [GitHub Link](#)
- 04/2024 - 08/2024 **Visiting Researcher**, *University of Chinese Academy of Science*, Beijing, China
- I generated and analyzed Monte-Carlo data for collider experiment.
 - I gave a lecture for Monte-Carlo techniques to graduate students.
 - I presented my progress of research at a international conference (LCWS 2024).
- 12/2021 - 11/2023 **Postdoctoral Fellow**, *Deutsches Elektronen-Synchrotron (DESY)*, Hamburg, Germany
- I generated and analyzed Monte-Carlo data for collider experiment.
 - I tested, developed and tuned the Whizard3+Pythia8 interface. They are two Monte-Carlo software.
 - These works were published in paper [arXiv:2302.01143](#) and presented at a international conference (LCWS 2023).
- 03/2019 - 12/2023 **Postdoctoral Fellow**, *Institute of High Energy Physics*, Beijing, China
- I generated and analyzed Monte-Carlo data for collider experiment.
 - I had implemented **Decision Tree** and **Neural Network** in our data analysis.
 - I applied for a postdoc exchange program between China and Germany on 2021.
 - The major publications in this period are: [arXiv:2302.01143](#) and [arXiv:2101.12537](#).

Education

- 10/2015 - 01/2019 **PhD of Theoretical Particle Physics**, *University of Siegen*, Siegen, Germany
PhD Thesis: Multi-Higgs Production at Future Hadron Colliders
- 09/2012 - 06/2015 **MSc of Atomic and Molecular Physics**, *University of Chinese Academy of Sciences*, Beijing, China
Master Thesis: Theoretical Research for The Propagation of Intense Femtosecond Laser in Air
- 09/2007 - 06/2011 **BSc of Opto-Information Science & Technology**, *University of South China Agricultural University*, Guangzhou, China

Personal Projects

arXivFlow, 2026.04-present, [GitHub Link](#)

- arXivFlow is a powerful Python-based automation tool to research paper discovery and tracking process.
- I also integrated this tool with local LLM by Ollama for paper analysis and data extraction.
- It is deployed to PyPI automatically by GitHub Actions.

HEPARA, 2025.05-present, [GitHub Link](#)

- HEPARA (High Energy Physics AI Research Assistant) is a project that aims to build an AI agent to assist researchers.
- Now it is developed by Gemini model and be able to interact with user by using data from REST APIs, Chroma database, or SQL database.
- More features are under development.

Machine Learning from Scratch, 2025.7-present, [GitHub Link](#)

- I build some machine learning models, from simple to complex, from scratch to understand their algorithms.
- The following models are included: Linear Regression, K-Means Clustering, Neural Networks, CNN, and Tree Based Models.
- I have also built a GPT in other [repository](#).
- These models have been test successfully by various datasets.

Additional Qualifications

- o Nikolai Uraltsev Fellowship of the Center for Particle Physics, University of Siegen (2015-2019)
- o China and Germany Postdoctoral Exchange Program (2021-2023)

Certificates

- o Google Cloud Data Analytics Specialization (ID: 4MV7X58L6Q38)
- o IBM Data Science Specialization (ID: X4YDL81HMPC4)

Knowledge and Skills

Languages

Chinese	Mother Language	<i>Cantonese and Mandarin</i>
English	Business Fluent	
Japanese	Business Fluent	JLPT N1
German	Good Knowledge	Nicos Weg - Einfach Deutsch lernen B1

Computer Skills

Languages	Python, C/C++, SQL
Database	MySQL, MongoDB
Data Analysis	Numpy, Pandas, Matplotlib
Data Visualization	Tableau, Power BI, Looker
Machine Learning	Scikit-learn, TensorFlow, PyTorch
AI & LLM	Gemini API, Langchain, Ollama, Antigravity, Codex
Cloud & Tools	Google Cloud Platform, Docker, Git

Links

GitHub	https://github.com/zjzhao1002
LinkedIn	https://www.linkedin.com/in/zhijie-zhao-6841b1269/
Kaggle	https://www.kaggle.com/zjzhao1002
LeetCode	https://leetcode.com/u/zjzhao1002/
Upwork	https://www.upwork.com/freelancers/~011e5b8226c992b44c