

Mengmeng Zhang

Clinical Researcher | Computational Scientist | AI Systems Developer

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RESEARCH PROFILE

Clinically trained researcher connecting clinical questions, complex health data and computational methods, from statistical modeling and interpretable machine learning to reproducible research systems. Research spans pain, mental health, adolescent health, women's health and longitudinal clinical data.

Exploring postdoctoral opportunities and research collaborations for 2027. Medical doctoral defense expected in spring 2027; timing remains anticipated and is distinct from degree conferral.

EDUCATION

Heidelberg University, Germany | November 2023-present
Doctoral Candidate, Internal Medicine and Psychosomatics.
Supervisor: Prof. Dr. med. Jonas Tesarz.

Tongji University School of Medicine, Shanghai, China | September 2020-July 2023
Master's degree, Psychiatry and Mental Hygiene.
Supervisor: Prof. Dr. med. Xudong Zhao.

Tongji University School of Medicine, Shanghai, China | September 2015-July 2020
Bachelor's degree, Clinical Medicine.

RESEARCH AND TECHNICAL STRENGTHS

Clinical data science: observational causal modeling, interpretable ML, network analysis, psychometrics, structural equation modeling and longitudinal analysis. Published methods and author positions are listed on the next page.

Research software: Python pipelines and tests; R / lavaan / psych; scientific validation contracts, source tracking, local persistence, React/TypeScript interfaces and Git-based reproducibility. Tool-using biomedical agents remain an active research direction, not a claim of clinical validation.

CURRENT INTERESTS

Reliable agents for biomedical research; computational medicine and multimodal health data; accessible medical AI. Interested in joining established teams, developing methods together, and working with high-quality clinical datasets.

Peer-reviewed publications

Selected publications. Author names and order follow publisher-deposited metadata. Equal contribution on the quantitative imaging paper was confirmed by the author on 19 October 2026.

1. **Mengmeng Zhang**, Xin Ma, Hui Li, Botao Huang, Yuhan Luo, Jie Qian, Meijuan Wang. Causal modeling of school aversion in psychiatrically referred adolescents: a DoWhy-based analysis. *BMC Medicine*. 2026. Published.

<https://doi.org/10.1186/s12916-026-04851-7> | First-listed author

2. **Mengmeng Zhang**, Xin Ma, Shuran Yang, Xudong Zhao, Chuanyuan Kang, Qiang Ke, Haojie Fu. Network analysis of the associations among parental age, primary caregivers, parenting stress, and children's emotional-behavioral difficulties. *Humanities and Social Sciences Communications*. 2026. Published.

<https://doi.org/10.1057/s41599-026-07796-7> | First-listed author

3. **Mengmeng Zhang**, Xin Ma, Shuran Yang, Xudong Zhao, Ying Zhang, Jonas Tesarz. Development and Validation of a Multidimensional Psychometric Scale for Assessing Pain Perception and Coping Strategies Among Adolescents. *Pain Research and Management*. 2026. Published.

<https://doi.org/10.1155/prm/3924115> | First-listed author

4. Haojie Fu, **Mengmeng Zhang**, Shuran Yang, Chuanyuan Kang, Liang Liu, Xudong Zhao. Decoding the adolescent non-suicidal self-injury: understanding with interpretable machine learning insights. *BMC Public Health*. 2025. Published.

<https://doi.org/10.1186/s12889-025-24354-z> | Second-listed author

5. Limin Gao, **Mengmeng Zhang**, Yuanhao Li, Lijuan Wang, Peng Qian, Jie Tong, Haojie Fu, Xirong Sun, Fufeng Li. From Traditional Inspection to Quantitative Imaging: Tongue and Facial Color Features for Automated Machine Learning-Driven Depression and Schizophrenia Classification. *Behavioral Sciences*. 2026. Published.

<https://doi.org/10.3390/bs16081442> | Co-first author

6. Xiaoting Sun, **Mengmeng Zhang**, Zhanghong Lu, Zhaoyu Zhang, Jialin Charlie Zheng, Liming Cheng, Lianhua Zeng, Yingli Qian, Lei Huang. Turnover intention and related factors among resident physicians in China under the standardised residency training programme: a cross-sectional survey. *BMJ Open*. 2022. Published.

<https://doi.org/10.1136/bmjopen-2022-061922> | Second-listed author

APSIA publication status was corrected from accepted to published (2026). Additional CV-listed Chinese-language papers require complete publisher metadata verification and are not included in this verified selection.

Research & collaboration

SELECTED SOFTWARE AND ONGOING PROJECTS

Research OS | Validated Prototype

Developed bounded local research workflow prototypes, evidence contracts, validation gates and scientific audit packages. The inspected deterministic v0.4 runtime performs tabular analysis/prediction and claim checks without an LLM or manuscript generation. Eight synthetic scientific-invariant tests re-executed during the portfolio audit passed.

Clinical causal/ML workflows | Published work and public code

School-aversion causal modeling, family network analysis, NSSI interpretation and psychiatric imaging classification. Public DAG-Dowhy supplies a separate aggregate-only AIPW pipeline with DAG, balance and propensity diagnostics.

CARE-Meno and CRC | Ongoing clinical research

Mixed-methods analysis/manuscript workflow for women's health; longitudinal symptom-system and quality-of-life workflows in colorectal cancer. Private participant data and unpublished findings remain restricted. CRC is clinical statistical research, not computational pathology.

AI4Science / LeadForge | Team development

Participated in scientific workflow development. Personally attributable commits support architecture, constraint/risk and product communication diagrams and rendering workflow. Individual implementation ownership of molecular generation/scoring engines is not established by the inspected history.

ClaimLens, TRACER and Confera | Research engineering

Local-first claim review, conflict-aware longitudinal record linkage, and resumable conference evidence retrieval with source tracking. See the portfolio for project-specific status and evidence boundaries.

SELECTED CONFERENCE PRESENTATIONS

ESMO Congress 2026, poster 3958P. Cognitive behavioral therapy was associated with symptom-system decoupling after chemotherapy in colorectal cancer. Mengmeng Zhang, Xin Ma, Meijuan Wang; Zhang and Ma share equal contribution on the inspected poster.

25th WPA World Congress of Psychiatry, Prague, 2025. Oral presentation on school-aversion causal modeling; short oral presentation on adolescent-parent pain sensitivity and attitudes. Presentation details follow the source CV.

24th WPA World Congress of Psychiatry, Mexico City, 2024. Poster on psychosocial influences on adolescent pain sensitivity (source CV).

SELECTED HONORS (SOURCE CV)

2025: Gold Winner, WPA 3 Minutes Competition; SHMJ50 selection.

2020: Chinese College Student Self-Improvement Star; Tongji University Pursuit of Excellence Scholarship.

2019: Red Cross charity medal.

Public research edition derived from the September 2026 English CV, updated using the October portfolio audit. Residential address, private phone, unsupported framework proficiency and unverified individual project roles are excluded.