Stanford

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Graduate, Medicine, Dermatology

Bio

BIO

I'm a German fourth-year medical student and Student Researcher at the Stanford Center for Digital Health, currently conducting my doctoral research at the intersection of artificial intelligence, cardiology, and patient-centered digital health under the supervision of Dr. Fatima Rodriguez and Dr. Paul Schmiedmayer. My work focuses on developing multimodal large language model (LLM)-based systems that integrate clinical and behavioral data to improve health literacy, patient activation, and early cardiovascular prevention at scale.

My current research addresses one of the most pressing challenges in modern healthcare: preventing the progression of early cardiovascular disease, particularly the recently defined cardiovascular-kidney-metabolic (CKM) syndrome, which affects the vast majority of adults in the United States. Despite major advances in the treatment of obesity, hypertension, and diabetes, cardiovascular disease remains the leading cause of mortality worldwide. A central bottleneck lies not in the lack of clinical knowledge, but in the insufficient translation of this knowledge into patient understanding, risk perception, and sustained behavioral change.

To address this gap, I develop and evaluate personalized, contextualized, and explainable conversational AI systems designed to support patients in understanding and managing their own health. By integrating longitudinal electronic health record data, patient communication, and behavioral trajectories, my work aims to create guideline-aligned AI systems capable of delivering interpretable feedback and personalized smart nudges through conversational interfaces. The broader vision is to establish scalable, clinically grounded frameworks for preventive cardiometabolic care that bridge advanced AI methodology with real-world patient behavior and implementation.

I ranked among the top 1% nationwide in Germany's first written medical licensing examination and additionally gained over two years of experience at Brainlab SE in Clinical Affairs, where I contributed to the management of more than 90 international clinical trials and regulatory approval processes. These experiences strongly shaped my interest in translational research at the interface of clinical medicine, technology development, and real-world implementation.

Beyond my research, I am the co-founder and former chair of OneAIM (one-aim.org), a student-led MedTech initiative that has grown into the largest organization of its kind in Germany, connecting more than 500 students across medicine, engineering, and computer science through interdisciplinary innovation programs. In parallel, I am actively involved in shaping medical education: as the only student member of the curriculum commission at the Technical University of Munich, I play a leading role in integrating digital medicine into the medical curriculum. I also served as instructor for the elective course "Neural Networks - AI in Medicine" at LMU Munich, where I introduced students to the intersection of clinical medicine and artificial intelligence.

My broader goal is to advance clinically grounded, explainable AI systems that not only improve clinical decision-making, but also empower patients and physicians alike, ultimately bridging the gap between technological innovation and meaningful real-world healthcare impact.