Stanford

Paul Schmiedmayer

Postdoctoral Scholar, Bioengineering

Bio

BIO

Dr. Schmiedmayer is the Lead Artificial Intelligence and Assistant Director of Digital Health at the Stanford Mussallem Center for Biodesign and a postdoctoral researcher at Stanford University. As a researcher at the intersection of AI, medicine, and software engineering, his work explores novel approaches to developing scalable, patient-centered platforms that harness AI and connected devices to deliver real-time, personalized health insights. His research addresses a critical gap by creating and investigating methodologies in healthcare software engineering, focusing on scalable platforms that enhance patient access to healthcare.

He earned his doctoral degree (Dr. rer. nat.; German equivalent of a PhD in computer science) at the Technical University of Munich, where he studied software engineering, mobile-based systems including smart devices, the applications and integration of machine learning techniques, and the evolution of web service-based distributed systems. He holds a master's and bachelor's degree in computer science from the Technical University of Munich.

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Technische Universitat Munchen (2022)
- Master of Science, Technische Universitat Munchen (2019)
- Bachelor of Science, Technische Universitat Munchen (2017)
- Dr. rer. nat., Technical University of Munich , (German equivalent of a PhD in computer science) (2022)
- M.Sc., Technical University of Munich , Informatics (2019)
- B.Sc., Technical University of Munich , Informatics (2017)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

A critical challenge in modern medicine is ensuring equitable access to comprehensive healthcare, particularly for underserved populations. Current healthcare systems often lack scalable, cost-effective, and personalized solutions, struggling to translate research innovations into practical applications.

Dr. Schmiedmayer's research addresses these challenges by developing scalable, intelligent, data-driven systems that leverage patient data and connected devices to provide real-time, personalized healthcare. He aims to validate these solutions by deploying AI-based models on resource-constrained, patient-facing devices, such as smartphones and smart devices, ensuring that personalized medicine is both cost-effective and privacy-preserving. The research's long-term goal is to create closed-loop systems that seamlessly integrate cutting-edge AI research with clinical practice,

leveraging software and hardware integrations to identify novel digital biomarkers and making healthcare personalized, scalable, equitable, and accessible to all.

A cornerstone of Dr. Schmiedmayer's research is the Stanford Spezi open-source software ecosystem. Spezi emerged from identifying key challenges in healthcare software development across numerous digital health projects. The open-source software ecosystem features a novel, modular, interoperable architecture that integrates healthcare standards, accelerates digital health innovation, and meets the growing demands of AI integrations. Without dedicated funding, Spezi has thrived on project-based use and open-source contributions, attracting over 500 contributions from more than 20 developers in just two years. Spezi now supports over 20 digital health and AI projects at Stanford and beyond, with 1,800 GitHub stars and contributions from over 90 collaborators, highlighting its significant impact.

You can learn more about Dr. Schmiedmayer's research projects at https://bdh.stanford.edu and visit https://spezi.stanford.edu to learn more about the Stanford Spezi ecosystem.

LAB AFFILIATIONS

- Josh Makower, Byers Center for Biodesign (9/26/2022)
- Oliver Aalami, Stanford Spezi (9/26/2022)

Publications

PUBLICATIONS

- **Enhancing Distress Tolerance Skills in Adolescents With Anorexia Nervosa Through the BALANCE Mobile App: Feasibility and Acceptability Study.** *JMIR formative research*
  Miranda, C., Matheson, B., Datta, N., Whyte, A., Yang, H. J., Schmiedmayer, P., Ravi, V., Aalami, O., Lock, J.
  2025; 9: e70278
- **Comprehensive real time remote monitoring for Parkinson's disease using Quantitative DigitoGraphy.** *NPJ Parkinson's disease*
  Hoffman, S. L., Schmiedmayer, P., Gala, A. S., Wilkins, K. B., Parisi, L., Karjagi, S., Negi, A. S., Revlock, S., Coriz, C., Revlock, J., Ravi, V., Bronte-Stewart, H.
  2024; 10 (1): 137
- **Quantitative DigitoGraphy: a Comprehensive Real-Time Remote Monitoring System for Parkinson's Disease.** *Research square*
  Hoffman, S. L., Schmiedmayer, P., Gala, A. S., Wilkins, K. B., Parisi, L., Karjagi, S., Negi, A. S., Revlock, S., Coriz, C., Revlock, J., Ravi, V., Bronte-Stewart, H.
  2024
- **Utility of smart watches for identifying arrhythmias in children.** *Communications medicine*
  Zahedivash, A., Chubb, H., Giacone, H., Boramanand, N. K., Dubin, A. M., Trela, A., Lencioni, E., Motonaga, K. S., Goodyer, W., Navarre, B., Ravi, V., Schmiedmayer, P., Bikia, et al
  2023; 3 (1): 167
- **CardinalKit: open-source standards-based, interoperable mobile development platform to help translate the promise of digital health.** *JAMIA open*
  Aalami, O., Hittle, M., Ravi, V., Griffin, A., Schmiedmayer, P., Shenoy, V., Gutierrez, S., Venook, R.
  2023; 6 (3): ooad044
- **Reducing the Impact of Breaking Changes to Web Service Clients During Web API Evolution**
  Schmiedmayer, P., Bauer, A., Bruegge, B., IEEE
  IEEE COMPUTER SOC.2023: 1-11
- **Global Software Engineering in a Global Classroom**
  Schmiedmayer, P., Chatley, R., Bernius, J., Krusche, S., Chaika, K., Krinkin, K., Bruegge, B., IEEE Comp Soc
  IEEE COMPUTER SOC.2022: 113-121