CSC-Tübingen PhD Scholarship Program

2026/2027 application round: prospective PhD positions at the University of Tübingen

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Faculty:	Faculty of Medicine
Institute / Section / Subject:	Institute for Ophthalmic Research / ZEISS Vision Science Lab
Supervising Professor(s):	Prof. Dr. Siegfried Wahl
About the Supervisor(s):	Prof. Dr. Siegfried Wahl, physicist and developmental neurobiologist, is the principal investigator of the ZEISS Vision Science Lab within the Institute for Ophthalmic Research. He is a renowned expert in visual impairment research, especially in myopia and presbyopia, and in developing new individualized vision solutions to enable and enhance natural vision. He is author of more than 100 peer-reviewed scientific contributions, and he is the organizational representative in IAPB (International Agency of Blindness) and IMI (International Myopia Institute).
Specification/Project title:	Representation Learning of Visual Behavior for Myopia Research
Topic Description:	Myopia research has identified various differences in eye movements, fixation stability, vergence behavior, and visual habits between myopic and emmetropic individuals. However, most existing studies rely on predefined eye-tracking metrics and hypothesis-driven analyses. This PhD proposes a data-driven approach that combines eye tracking, artificial intelligence, and extended reality (XR) to discover latent structures in visual behavior. A large multimodal dataset will be collected using a standardized battery of visual tasks. Modern representation-learning methods will be used to identify recurring behavioral patterns without predefined assumptions. These patterns will then be related to refractive error, axial length, near-work behavior, and other myopia-related factors. Finally, adaptive XR systems will be developed that can recognize and influence visual behavior in real time.

Intended Degree:	Dr. rer. nat.
Type of the PhD Study:	Full-time (complete doctoral studies at the University of Tübingen)
Required Degrees and Qualifications:	Master in Computer Science, Data Science, ML, or similar
Language Requirements:	English
Notes:	The ZEISS Vision Science Lab offers an innovative, international, and interdisciplinary environment with cutting-edge methods for meaningful contributions to eye health. It is from advantage if the candidate has already experience in gaze tracking, handling big-data, and/or virtual reality programming.