HiWi Position

Visual Interface using ARIA Glasses for Retinal Implants

Application Deadline: 1. January 2024
Interview: 8. or 9. January 2024
Contract Start: 1. March 2024

Background
Retinal implants typically utilize a pair of glasses to house the camera system for capturing visual information. In this project, we will employ the glasses from Project Aria [1], a research project from Meta, to acquire and process the captured information as input for the simulation. Thanks to the eye-tracking sensors of Aria glasses, we can easily localize salient areas in the visual field, mimicking fixations. Finally, the collected data will be evaluated using the Python-based open-source retinal prosthetic simulation framework pulse2percept [2], and the deep learning-based stimulation optimization [3].

[1] https://www.projectaria.com/ © Meta

Tasks
• Conduct literature review and read documentation
• Perform hands-on configurations with Aria glasses
• Conduct experiments with the prosthetic simulation framework and the stimulation optimization framework

Your Profile
• Programming experience (preferably in Python)
• Knowledge in image processing / computer vision
• Experience with deep learning, e.g. ViT
• High motivation and good time management

Our Offer
Our institute features an ultra-modern computer infrastructure, including a remotely accessible cluster for training deep learning networks with dozens of GPUs. You can also conduct hands-on experiments with Aria glasses [1]. Throughout the working period, you will be actively supported via jour fixe meetings. If you are interested, please send your application via email to yuli.wu@ifb.rwth-aachen.de, including your résumé and the latest transcript of grades (‘Notenspiegel’), before 1. January 2024.