ETH zürich

Institute for Biomedical Engineering Integrated Systems Laboratory

Soft-/Hardware Engineering for Biomedical Research Project (20% or more, paid positions)

We are looking for one or more research assistants to reinforce our research team for a wearable field measurement sensor in magnetic resonance imaging (MRI) systems at ETH Zurich. Start can be any time upon agreement, the employment can last until project end mid 2024 or even beyond.

The research project is on wireless sensing and real-time correction for head motion in MRI. The latter is a big issue for medical diagnosis as about 15% of head scans are impaired by motion which makes the interpretation of the image more difficult. The Institute for Biomedical Technology (IBT) at D-ITET of ETHZ has developed a method to determine head motion with help of a head attached sensor that measures the field dynamics of the MRI scanning RF signal. The project seeks to miniaturize this sensor in cooperation with the Integrated Systems Laboratory (IIS) of D-ITET with the development of a dedicated application specific IC (ASIC) and with adding wireless communications functions to it.

The project now enters implementation phase where different tasks, such as programming the wireless communication device, programming the central unit of the system, conducting different measurements, designing, assembling, debugging sensor sub-systems, validating circuit blocks in the ASIC and drawing layout come up. Depending on project needs and your qualification and interests you will work on one or multiple of these tasks to move the project forward.

We are offering multi-faceted and challenging student research assistant position(s) paid by the hour in a modern research environment with excellent infrastructure.

If you are interested, send an e-mail to burger@iis.ee.ethz.ch (Dr. Thomas Burger, Senior Scientist at the Integrated Systems Lab, D-ITET, ETH Zurich) explaining your motivation for the offer, together with a CV on your professional background.