Title: Digital Electronics Engineer for Neuro-Technology
Position: 80% to 100%, Permanent
Posted on: 22 November 2023
Location: Wyss Center for Bio and Neuroengineering, Campus Biotech, Geneva Switzerland

About the Wyss Center for Bio and Neuroengineering, Geneva, Switzerland
The Wyss Center is an independent, non-profit, research organization that innovates and accelerates technologies and therapies to transform the lives of people with neurological and mental health disorders. The Center pursues transformational technologies in artificial intelligence, bio- and neuroengineering to restore essential neural functions and deliver precision therapeutics for people with debilitating neurological and mental health disorders.

Based at Campus Biotech in Geneva, Switzerland, the Wyss Center partners with faculty, clinicians and industry, in Switzerland and internationally, to drive innovation and maximize clinical impact. The Wyss Center was established by a generous donation from the Swiss entrepreneur and philanthropist Hansjörg Wyss in 2014. Additional resources from funding agencies and other sources help the Wyss Center accelerate its mission.

About the Position
The Digital Electronics Engineer for Neuro-Technology will join the Wyss Center’s Electronics Engineering team, which is focused on designing and developing innovative medical devices and technologies for a range of human applications targeting brain disorders. The successful candidate will design electronic circuits, write firmware, test, and document medical devices in compliance with global regulatory standards including IEC 60601 series, FCC, ETSI, etc. The role involves collaborating with neuroscientists, neurobiologists, clinicians, engineers, quality and regulatory experts, and suppliers to determine design criteria and develop new solutions in a timely and efficient manner.

This position reports directly to the Electrical Engineering Team Manager.

Key responsibilities:
As Digital Electronics Engineer for Neuro-Technology, the successful candidate will contribute to multiple Wyss Center’s projects. They will participate on the design and implementation of electronic systems for neurotechnology, including electronics for active implantable medical devices and wearable technologies. In addition, they will perform hands-on Research and Development (R&D) activities for new technologies when required. More specifically, they will:

- Design high-speed digital electronics for neuro-sensing and neuromodulation applications.
- Integrate field programmable gate arrays (FPGAs) with application specific integrated circuits (ASICs).
- Implement high-performing and fail-safe firmware in Verilog.
- Design a variety of electronic circuits such as voltage regulators, data links, amplifiers, filters, analog-to-digital converters, and digital to analog-converters.
- Optimize designs to ensure compliance with electromagnetic compatibility (EMC) requirements.
- Contribute to the test and integration of medical systems, including active brain implants.
- Create detailed technical documentation for electronic designs.
– Contribute to risk assessment and risk management activities.
– Perform design failure mode & effects analysis (dFMEA).
– Participate in all phases of medical device development for electrical components, including the creation of user and design input requirements, detailed design development, test method development, and design verification.

**Required competence and experience:**
– MSc degree or PhD in Electronics Engineering (or equivalent) with 5+ years of relevant work experience.
– Extensive skills in writing of firmware for FPGAs, including design constraints and timing analysis and optimization.
– Experience with developing medical devices under an ISO 13485 Quality Management System (QMS) and in compliance with the ISO 14971 risk management process.
– Familiarity with the safety requirements of IEC 60601-1 for electrical medical devices.
– Experience with verification and validation of class II or class III medical device systems.
– Experience with EN 45502 (or ISO 14708) standards or in similar regulated field such as automotive or spatial.
– Experience in the development of firmware according to IEC 62304, or willingness to learn.
– Experience in the design and testing of mixed-signal PCBs, where low-noise analog signals coexist with fast digital signals.
– Excellent debugging skills.
– Ability to maintain a positive outlook, to collaborate effectively with others, and to communicate proficiently both verbally and in writing.
– Capability to work well within a cutting edge, fast-paced, multidisciplinary environment.
– Aptitude for innovation, willingness, and ability to drive change, passion for quality and continuous improvement.
– Fluent in English, French is a plus.

**Preferred Qualifications:**
– Knowledge or interest in neurotechnology.
– Familiarity with multiple FPGA development tools such as Xilinx, Altera, Lattice and Microsemi.
– Experience in scripting languages such as Python.
– Skills in test automation.

Preference may be given to candidates who are eligible to work in Switzerland, such as Swiss citizens or holders of a valid Swiss work permit.

This position is available **immediately**.

**To apply,** please send your **CV and covering letter** describing your qualifications, background, and interest in this position to **HR@wysscenter.ch** no later than **17th December 2023**