Software Engineer C++ : OpenViBE software medical certification

12-Month contract : open

Inria, Hybrid team, Rennes, France

About Inria

Graduates from the world's top universities, Inria's 2,700 employees rise to the challenges of digital sciences. Research at Inria is organised in "project teams" which bring together researchers with complementary skills to focus on specific scientific projects. With this open, agile model, Inria is able to explore original approaches with its partners in industry and academia and provide an efficient response to the multidisciplinary and application challenges of the digital transformation. The source of many innovations that add value and create jobs, Inria transfers expertise and research results to companies (startups, SMEs and major groups) in fields as diverse as healthcare, transport, energy, communications, security and privacy protection, smart cities and the factory of the future.

Context

Inria has been hosting and supporting the well-known OpenViBE software since 2009. OpenViBE (http://openvibe.inria.fr) is an open-source software for the development, testing and using of Brain-Computer Interfaces and neuroscience research. Founded in 2012, Mensia Technologies is a medical-device spin-off of Inria owning a commercial license of the OpenViBE software for medical applications. So far, OpenViBE has raised a lot of interest in the research community, especially on medical applications. However, OpenViBE being a research-software, it does not yet matches the requirements of medical devices in terms of stability, performance, documentation, as well as engineering processes in general, slowing down the transfer of OpenViBE-based medical research to the industry. Within the new CertiViBE project, Inria and Mensia Technologies are putting their task forces and respective expertise together to deliver a certifiable core for the OpenViBE software. While the OpenViBE software will continue to be published as an Open Source software, the project will dramatically facilitate the transfer of the research made with OpenViBE as it will be built on ready-to-certify foundations, following the processes and normative regulation of medical devices development including risk analysis, quality assurance and medical device software development and maintenance.

In this context, the recruited software engineer will be working on the certification effort related to OpenViBE. He/she will adapt the software architecture and develop (or redevelop) software features, along with writing the associated documentation. He/she will implement and integrate the unitary tests. He/she will also be in charge of the release of the platform towards the open-source community.

The recruited engineer will be part of Hybrid team (http://team.inria.fr/hybrid) at Inria, Rennes, under the supervision of Dr. Anatole Lécuyer, and will work in close collaboration with our industrial partner Mensia Technologies (http://www.mensiatech.com).

At the end of the 12-month contract, the engineer is a natural candidate for joining Mensia Technologies startup. Addition offers from Hybrid research team could also be possible.

Activities :

- Adaptation and evolution of software architecture

- Technical and quality documentations

- Development of software components

- Writing and integrating unit tests in the Continuous Integration

- Release of software platform to the open-source community of users

Background :

- Master (or equivalent) in Computer Science with 2 to 8 years of experience
- Previous experience in certification context would be a plus
- Previous experience in biomedical engineering, neuroscience, cognitive science, of brain-computer interfaces would also be a plus

Skills:

- Highly skilled in C/C++ programming,

- Skilled in software architecture design and design patterns,

- Experience with concurrent software development tools (Git, GitHub)

- Capacity to write extensive technical documentation

- Experience in standard-driven software development would be a plus, especially standards related to medical devices

Contacts :

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