Senior Software Engineer

Job Reference: SSE0219
Posted: February 2019

Location: London
Weekly Hours: 40

The Role

DNAe, the inventors of semiconductor-based next-generation sequencing (NGS) technology, is developing a medical instrument. Using DNA sequencing, the instrument detects presence of bacteria in human blood. The role is responsible for digital signal processing software and hardware control software.

We at DNAe are currently looking to hire Senior C++ Software Engineer in the Sequencing Software Team.

Responsibilities – General

We at DNAe are looking for self-starting, experienced C++ software engineer who finds passion working on complex scientific and engineering problems. DNAe instruments produce large volumes of real time data. The role requires developing and maintaining a high-throughput data analysis algorithms, data handling (new file formats), visualization and orchestration. A high level of creativity and problem solving will be essential to define, analyse and visualize the sequencing data and associated metrics. Specific activities include,

- To become development lead and owner, for the instrument software and digital signal processing
- Analysis and rigorous modelling of raw electronic signals generated by the DNAe NGS platform
- Develop hardware control software which needs to interact with FPGA and microcontroller firmware.
- Perform analysis of data sets generated by ongoing R&D work including but not limited to modelling of raw electronic signals generated by the DNAe NGS platform
- Drive the software through the full life cycle, including software requirements, design, implementation, testing and maintenance using Agile development methodologies
- In collaboration with the IT department and independent contractors (as required), develop and maintain an IT infrastructure to support robust and efficient data management, analysis and storage in a regulated environment

Person Specification

Our scientists and engineers thrive on working within interdisciplinary teams. You should have a practical, self-motivated approach to your work, feeling comfortable with working in a small, dynamic start up environment. We are looking for people with a passion for their work - people who strive for exceptional results and who can deliver pragmatic solutions on time.

The ideal candidate also likes to contribute to solving problems outside their field of immediate expertise and is an effective communicator.

Required qualifications and experience

- MS or PhD in Computer Science, Physics, Mathematics, or equivalently technical discipline, or extensive software product development experience
- Extensive solid software development experience using C++ and is a must, ideally in medical device software development and in accordance with IEC 62304 standard.
- Understanding and demonstrable skills in real-time signal processing, data analysis, control theory, optimisation, pattern recognition and machine learning
- Experience in producing software specification documents for regulated environments
- Confident in a Linux environment and Git source code repository
- Clear communication skills and proven ability to train others

Experience in the following areas would be advantageous

- Extensive experience designing, developing and validating medical device control software
- Working knowledge of advanced C++, such as Boost, Qt, CMake, CppUnit and valgrind
- ARM, FPGA, DSP or GPU processor-based Platform Development
- Experience of bare-metal embedded development and OOD for embedded systems
- Past development experience in the USB device/host end application
- Experience with scientific Python libraries - SciPy, NumPy, Pyplot, Pandas is nice to have
- Working with large data sets: Real time data processing, cloud computing
- Experience of the process requirements, documentation and traceability needed for regulated development. (Preferably, but not necessarily IEC 62304) (e.g. military / safety-critical)
- Experience developing medical software validation procedures
- Deep knowledge of statistical and machine learning methods is a big bonus

Location

While our team is located in DNA Electronics headquarters at White City, London, UK.

Apply

If you believe you meet the above criteria and would relish playing a key role in developing a revolutionary technology, we would be delighted to hear from you.

We offer a competitive compensation package to successful candidates.

Please email your CV, making a note of your salary expectations and availability in the email to: careers@dnae.com quoting the **job title and your name** in the subject line.