Job Title: Engineering Intern
Company: ElectroSonix, LLC
Location: Tucson, Arizona
Industry: Medical Device
Job functions: Engineering, MatLab, software, C, C++, FPGA, AD/DA conversion

Part-Time Position

We seek an innovative and motivated Engineering Intern to join our Engineering team.

ElectroSonix is a Tucson, AZ based startup company founded in 2016 developing non-invasive acoustoelectric cardiac imaging (ACI) technologies for imaging and localizing cardiac electrical activity in real-time; greatly improving the accuracy of arrhythmia diagnosis and the success rate of ablation procedures leading to improved patient outcome and reduced medical costs. ElectroSonix has demonstrated the feasibility of ACI in the lab. ElectroSonix efforts will benefit millions of cardiac patients in a multi-billion-dollar market. Applications for our technologies also include high resolution brain mapping by real-time and portable 4D acoustoelectric imaging.

The Engineering Intern will apply in-depth knowledge and experience of system development concepts and work in the technical design and development of circuit boards.

Expectations and Responsibilities include:

1) Use Matlab to allow direct data collection and storage
2) Starting from the MatLab code at University lab, extract and rationalize the software components to:
   (a) allow extraction of the raw time-domain waveform for a particular beam location,
   (b) use filtering to extract the AE signal from the above waveform for a particular beam location
   (c) use the data above to populate a 4D data structure
   (d) process the low-frequency information to obtain EKG timing information
3) Provide a set of tools for visualizing the 4D data, initially as a point cloud, with interactive rotation and zoom capabilities

Desired Skills:

- Some experience in the fields of Engineering and/or Computer Science
- Experience with MatLab and PSPICE, schematic capture/layout tools
- Familiarity with LabVIEW and National Instruments data acquisition systems
- Experience with C/C++, Eagle, Verilog/VHDL
- Experience development FPGA-based code to implement algorithms
- Knowledge of communication protocols
- Strong circuit design and problem-solving skills
- Ability to multi-task
- Embedded systems design and firmware development experience
- Research and development for analog and mixed signal devices
- FPGA programming expertise
- Able to develop solutions to complex problems that require the regular use of creativity, and originality
ElectroSonix

- A proactive person who takes pride in their work with a positive, energetic and ‘can do’ attitude
- Excellent written and oral communication skills

Potential candidates should contact Ms. Sonia Vohnout at svohnout@electrosonix.net. Please include cover letter describing your interest and qualifications, and a resume.