Job Title: **Audio R&D Scientist**
Reference: **ENG-026**
Date: March 14th**, 2024**

About EERS

Founded in 2014, EERS invents, designs and tests in-ear advanced technologies to accelerate go-to-market of game-changing products. Our cutting-edge technology augments the human experience in communication in challenging situations, hearing protection, biometric and wellness monitoring, brain computer interfacing, and is repeatedly validated in the field and some have become an ANSI Standard.

Through co-development partnership, we bring a stream of new products to market. Beyond prototyping, we produce actual scalable, easily transferable, manufacturable product taking the development execution risk out of the equation.

A global centre of excellence in research in acoustics, audio and biosignal processing, in-ear technologies and product development, we attract high-caliber scientists and engineers to our team. Our head office is located in the heart of downtown Montreal. We offer competitive salaries as well as a great team environment. EERS Global is an equal-opportunity employer committed to diversity.

Job Description

Reporting to the Principal Audio R&D Scientist, Antoine Bernier, the **Audio R&D Scientist** is responsible for carrying out acoustical measurements, conducting data collection, and participating in the design processes pertaining to headphone acoustics and audio signal processing algorithms.

The position involves addressing specific challenges related to audio signal processing and acoustical simulation that require in-depth experimentation and subject understanding to resolve. Specifically, the successful candidate will be required to survey subject literature, construct test environments in MATLAB, conduct data collection, carry out analysis of audio data and user studies, and develop audio applications on MATLAB, Python and C++.

The successful candidate must be detail oriented, organized. and have good signal processing knowledge.

This is a dynamic role that will require the ability to collaborate to develop and integrate multiple development streams into commercially viable products.

Duties and Responsibilities

- Characterize audio signals using FFT, spectrograms, transient separation, formant analysis, envelope extraction, etc.
- Design and use acoustical test processes to extract frequency response measurement, dynamic range.

- Carry out an acoustical simulation process, with the help of the Principal Audio R&D Scientist, to predict the frequency response of headphones.
- Participate in the design and characterization of various audio algorithms.
- Summarize, document, and communicate findings, solutions and strategies.
- Participate in data collection (in lab and in field), develop experiment protocols, organize user studies.

Education and work experience

- Electrical engineering, computer science, audio/music technology or related
- Master's degree with thesis/coursework in audio technology
- Bachelor's degree with relevant internship and projects in experience in audio research

Minimum Knowledge, Skills & Abilities:

- Knowledge of DSP concepts such as time-frequency analysis, FFT analysis-synthesis and expertise in one or more of the following: denoising, dynamic equalizers, limiters/maximizers, compressors, active noise cancellation, feedback control, echo cancellation, adaptive filtering.
- Familiar with MATLAB, Python or C++
- Knowledge of using DAWs such as Audacity and Reaper.
- Experience with sound and recording equipment such as microphones, audio interfaces, loudspeakers, digital mixing consoles.
- Experience with automation and efficient workflows to analyze and process audio data
- Basic knowledge of statistical analysis.
- Basic knowledge of analog circuits and basic circuit simulation.

Additional skills:

- Effective written and verbal skills in French and English.
- Good people and communication skills: ability to accept directions, provide and receive constructive feedback.
- Strong technical aptitude: exhibit a structured and detail-oriented approach.
- Excellent analytical and problem solving skills.
- Strong time management and organizational skills; ability to handle multiple tasks, be punctual, and respect deadlines.
- Ability to work both autonomously and collaboratively as part of multi-disciplinary teams.
- Self-motivated and focused.

If you have most but not all of the skillset but are interested, we encourage you to apply. Please send your cover letter and resume to cv@eers.ca OR submit them through our EERS Career platform.