Postdoc position in designing earable platforms for virtual and augmented acoustic reality

The human hearing system can perform complex tasks like filtering, normalization, sound source localization and separation. However, there are also fundamental limitations to our auditory perception. For instance, people have trouble determining whether a sound originates from the back or front without moving their heads in spatial sound localization, and human auditory range is typically limited to between 20Hz and 20KHz. To make matters worse, as people age, their high-frequency sensitivity, the ability to understand conversations in noisy environments and to localize sounds degrade over time. With the advancements in MEMS technologies, hearable devices become increasingly sophisticated with a variety of sensors, on-board processing capability and wireless connectivity. The goal of the Virtual and Augmented Acoustic Reality (VAAR) project in McMaster University in collaboration with Western University aims to transform commodity hearable devices such as earbuds and headphones into smart auditory devices that not only detect and mitigate mild-to-medium hearing losses but also enhance our acoustic experiences.

The 1-year postdoc position (renewable depending on funding availability) targets to develop a multifunctional open research platform for audio and multimodality signal processing. Prospective candidates should have the following qualifications:

1. PhD degree in ECE or biomedical engineering
2. Experiences in microelectronics and embedded system design
3. Experiences in acoustic and biological signal processing
4. Familiarity with FPGA a plus but not required
5. High proficiency in oral communication and technical writing in English

The annual compensation is expected to be equivalently 60K/yr (benefits included). McMaster University is an equal opportunity employer.

Interested candidates please email CVs and names of 3 referees to Dr. Rong Zheng (rzheng@mcmaster.ca) and Dr. Ian Bruce (brucei@mcmaster.ca) directly.