

## **2X Fully funded COG-MHEAR PhD studentships by the School of Computing, Edinburgh Napier University, UK**

The School of Computing at Edinburgh Napier University (ENU) is inviting applications for two fully-funded PhD studentships to support the prestigious UK EPSRC funded Programme Grant: COG-MHEAR, led by Programme Director, Professor Amir Hussain. ENU Co-investigators are Prof Ahmed Al-Dubai, Prof Bill Buchanan and Prof Emma Hart.

COG-MHEAR is a world-leading cross-disciplinary research programme funded under the EPSRC Transformative Healthcare Technologies 2050 Call. It includes academic partners from 6 other UK Universities and a strong User-Group comprising industrial and clinical collaborators, and end-user engagement organisations (including Sonova, Nokia-Bell Lab and Deaf Scotland). The ambitious programme aims to develop the world's first multi-modal hearing-aid demonstrator by radically exploiting and integrating the transformative potential of privacy-assuring and explainable AI, 5G, IoT and cybersecurity, coupled with flexible (skin-based) electronics.

Further information about the School of Computing can be found [here](#). Additional facts and figures on the University can be found [here](#).

The appointed PhD students will take an active research role, under the supervision of COG-MHEAR investigators and COG-MHEAR postdoctoral fellows, to support one or more individual project in COG-MHEAR. The PhD students will be mentored by leading professors and supported to develop interdisciplinary research and innovation skills.

As part of a cohort-based training programme, the ENU PhD students will undertake supervised research in collaboration with other COG-MHEAR project teams and students. This will include participation in external research networks and appropriate events in order to build new relationships, exchange ideas and disseminate findings, including through the development of relationships with postdoctoral researchers, PhD students and COG-MHEAR User-Group members.

Priority COG-MHEAR PhD research areas of interest include:

- Privacy-preserving and explainable artificial intelligence (AI)/machine learning and large-scale optimisation for real-time multi-modal speech enhancement and intelligibility evaluation.
- This can include novel AI algorithms for exploring public/end-user perceptions of hearing-aids and other assistive-hearing technology, eliciting end-user requirements, development of real-world audio-visual (AV) speech-in-noise tests and clinical evaluation of AV hearing-aid prototypes.
- IoT-enabled real-time speech enhancement and hearing-aid prototype development, including exploring flexible/quantum-electronics and multimodal wireless sensing for end-user cognitive load management.

Applicants are expected to hold a very good (at least 2.1) undergraduate degree or Masters degree in a relevant discipline with strong quantitative research skills. Examples of relevant disciplines include: artificial intelligence/machine learning, hearing-aids/assistive technology, language and speech processing, clinical and intelligibility evaluation, IoT-enabled computer vision, wireless RF sensing and analytics, flexible/quantum electronics, neuromorphic hardware/engineering, and/or multi-modal signal/image processing.

A relevant publications record would be desirable, along with some experience of audio/visual recordings, speech, language, audiology or hearing science. Applicants from industry, or with relevant industrial experience, are also encouraged to apply.

Please note that the studentships will provide a stipend at the UKRI rate (£15,609 per year for 2020/21) and cover tuition fee at the UK/Home student rate only. International applicants will be required to pay the difference in overseas and home-rate tuition fee.

Research inquiries can be made to Prof Hussain ([a.hussain@napier.ac.uk](mailto:a.hussain@napier.ac.uk)).

### **HOW TO APPLY:**

Please send a CV and a cover letter indicating how you will contribute to research in one or more of the above areas, with the subject heading "COG-MHEAR PhDs" to Prof Hussain ([a.hussain@napier.ac.uk](mailto:a.hussain@napier.ac.uk)).

**Applications Closing Date:** 4 July 2021 – we will continue to accept applications until all positions are filled.

Interviews are likely to be held around mid-May, with a start date in Summer 2021.

### **Indicative COG-MHEAR References:**

<https://www.sciencedirect.com/science/article/pii/S1566253520302475>

<https://www.sciencedirect.com/science/article/pii/S1566253518306018>

[http://spandh.dcs.shef.ac.uk/chat2017/papers/CHAT\\_2017\\_hussain.pdf](http://spandh.dcs.shef.ac.uk/chat2017/papers/CHAT_2017_hussain.pdf)  
<https://link.springer.com/content/pdf/10.1007/s12559-019-09653-z.pdf>

The University is committed to inclusion, demonstrated through our work in respect of our diversity awards and accreditations (Advance HE's Athena SWAN Charter) and hold Disability Confident, Carer Positive and Stonewall Scotland Diversity Champion status. More details can be found [here](#).