

## **PhD - Agile Architectures for Multimodal Speech Understanding.**

<b>Position:</b>	PhD Studentship
<b>Funding:</b>	EU/Non-EU Fees plus tax-free stipend of €25,000 per annum for 4 years
<b>Where:</b>	EE Engineering, School of Engineering, Trinity College Dublin, Ireland
<b>Supervisor</b>	Prof Naomi Harte
<b>Start Date</b>	Sept 1 <sup>st</sup> 2025

### **Background:**

It is known that many modalities (e.g. articulation, mouth movements, eye gaze, head nods, back channels and gestures) play a role in communication success in speech-based interaction. Lombard speech is one way we modify the sound of our voices to ensure we communicate clearly with others in noisy environments, but recent research has shown that Lombard speech in reality is multimodal. This PhD student will focus on approaches to tracking a conversation that incorporate knowledge from the visual modality of speech to support understanding in noisy conditions. By gaining deeper insights into how multimodal cues are exploited in noisy conditions, the research will look at approaches to architectures that approach the level of flexibility humans have in adapting to changing communication challenges. This PhD research is part of a larger SFI Frontiers project SpeechSpace focussed on multimodal speech and led by Prof. Harte. The funding available will cover fees and stipend, but also equipment and conference travel associated with the research.

### **Person Requirements:**

- Primary or Master's degree in Electronic Engineering or closely related discipline, with an interest in engaging in multidisciplinary research
- Must meet TCD University requirements at <https://www.tcd.ie/study/apply/admission-requirements/postgraduate/>
- Strong skills in coding, machine learning, deep learning, and signal processing with the willingness and motivation to learn new skills and packages
- Prior experience with speech-based interaction desirable
- Excellent communication skills, both spoken and written, and fluency in English

### **The position**

- Prof Harte's research group brings together a diverse and friendly group of people who are all interested in pursuing research in speech-related topics and like to share ideas and learn from one another. As such, this is a fully in-person position for someone who wants an in-person PhD experience and would like to contribute to our group both technically and socially.

To apply for the position, please complete the following application form:

<https://forms.gle/YAif8DfV7eSVRdxM8>

Informal inquiries only to Prof Naomi Harte at [nharte@tcd.ie](mailto:nharte@tcd.ie)