**PhD Scholarship Advertisement**

Fully Funded PhD Scholarship in building *privacy-secure computer vision solutions for assistive supports for older adults at home* at the [Center for Computational, Cognitive and Connected Imaging](https://www.universityofgalway.ie/c3i/) (C3I).

Application(s) are invited from suitably qualified candidates for full-time funded PhD scholarship(s) starting from March 2024 affiliated to the College of Science & Engineering at the University of Galway.

**University of Galway**

Located in the vibrant cultural city of Galway in the west of Ireland, the University of Galway has a distinguished reputation for teaching and [research excellence](https://www.universityofgalway.ie/our-research/)

For information on moving to Ireland please see [www.euraxess.ie](http://www.euraxess.ie)

**Detailed Project Description**

This is one of 3 Ph.D. positions on the PRIVI-SENSE project to reinvent today’s computational imaging as a privacy-secured method of sensing human subjects. Positions are available from Jan 2024. You can find out more about our work [here](https://www.universityofgalway.ie/c3i/publications/).

This Ph.D. research topic will explore the extension of existing physiological, emotional and cognitive sensation based on conventional imaging, to employ methods based on multi-modal (NIR, LWIR and Neuromorphic) imaging data. A key challenge here will be to better correlate these involuntary behavioural patterns of a subject with their cognitive and emotional state. A secondary objective will be to investigate the potential of multi-modal imaging to achieve physiological sensing of, for example, a subject’s pulse rate. Other behavioural patterns, e.g. eye-movements or facial tics, could be linked to underlying physiological conditions.

A key end goal is to advance the use of smart-sensing in support of the well-being of home workers and older adults at home – a field where research is growing following the broad adoption of home-working during the pandemic. Also, this research topic may encompass speech analysis to enhance computer-vision based sensing. (C3I has built significant know-how on child speech analysis and synthesis in the past 3 years). Note that C3I works with a number of industry partners and there will be opportunities for industry placements as part of this scholarship.

A more complete description of the project work and related Ph.D. and postdoctoral opportunities is available here: <https://www.universityofgalway.ie/c3i/vacancies/>

**Living allowance (Stipend):** €22,000 annual stipend (tax-free). Tuition fees are paid.

**Academic Entry Requirements:** Candidates must have a top honours grade in Electronic Engineering or Computer Science and completion of a relevant Masters degree or 5-year degree program is desirable. Candidates should be highly motivated and should have a strong background in programming, computer vision methods, and neural-network (NN) based data analysis.

In addition prospective candidates should have some background and experience in:

* State-of-Art Neural Architectures/Models for Computer Vision and/or Speech Processing
* Fine-tuning or customization of one or more Neural Network Models (i.e. significant re-training or re-programming of the neural model)

Also Desirable to have experience in one or more of the following:

* Designing and running experiments with well-defined research outcomes
* Working with complex neural architectures (e.g. GANs, Transformers, Diffusion Models, etc)
* Working with multi-modal imaging data (e.g. NIR, LWIR or Event Cameras).
* Working on *advanced* data augmentation or *learned* augmentation techniques to support re-training of neural models
* Techniques for implementation of neural architectures on embedded systems or in hardware (e.g. FPGA, tinyML, network compression, sparsification, etc)

**To Apply for the Scholarship:** Send e-mail directly to [peter.corcoran@universityofgalway.ie](mailto:peter.corcoran@universityofgalway.ie) marking “PRIVI-SENSE Ph.D. #1” in the e-mail. Kindly apply for the opportunity best aligned with your experience & interests. DO NOT apply for more than one position.

**Contact Name:** Prof. Peter Corcoran

**Application Deadline:** open until all positions filled

**Primary Supervisor:** Prof. Peter Corcoran