



Research Assistants

ST-09 Research Assistants -Wearable Sensors

Contract: Full Time/Fixed Term

The [Wireless Sensor Network Group \(WSN\)](#) at the Tyndall National Institute, University College Cork is currently advertising for the position of Research Assistants in **Wearable Sensors for Connected Health and Wellness monitoring**.

The Tyndall National Institute, at University College, Cork is a world leader in the development of wearable sensor systems for use in the body, on the body and around the body. Working closely with a global range of academic, business and clinical partners, our technology is under evaluation by several multinational corporations and is approaching market readiness in a number of areas.

The Wireless Sensor Network (WSN) group at Tyndall has secured funding in the development of Smart systems for next generation wearable sensors for sports and rehabilitation. These systems will incorporate multiple sensing modalities and communications technologies to solve the research problem of accuracy and precision, low-latency and high-speed real-time motion tracking.

The successful candidate will therefore be required to integrate and control the relevant components of the wearable system. This will involve reviewing state-of-the-art in wearables on an ongoing basis; identifying appropriate signal analysis techniques and methodologies suitable for the assigned tasks; implementing efficient versions of the signal processing techniques by using different programming tools (Matlab, C, Java) also targeting devices with constrained resources; developing algorithms for wearable sensors; defining prototypes and demos; aiding the wider team with validating system performance under laboratory conditions.

This is an initial 12 month contract with scope for extension subject to performance and funding secured.

Reporting to the WSN Head of Group or his nominee, this is an exciting opportunity to help define and implement applied research projects in this fast-moving, industrially relevant area of wearable sensing systems. Working with the Wireless Sensor Network (WSN) Head of Group and industry applied research team, the successful candidate will be part of a team of multi-disciplinary industry aligned researchers with expertise in microsystems technology, wireless sensors, electronics and low-power system hardware and software design to execute industry defined applied research projects. The team comprises of engineers, researchers and postgraduate students with various levels of experience and qualifications.

Activities will include applied research implementation, data analytics implementation on devices with constrained resources, and travel to international conferences, workshops, industry meetings, proposal project meetings and dissemination of the group's activities in high impact journal and conference publications.

Key Responsibilities

Reporting to the Project Principle Investigator and Group Head, the candidate will be required to:

- To provide assistance in conducting the following research activities, including planning, organising, conducting, and communicating research studies within the overall scope of the

research project.

- To assist in the system specification, design and deployment of wireless sensing systems.
- To undertake tasks which may include data analytics of wearable sensors for Connected Health and Wellness incorporating inertial/physiologic sensors, algorithms development using Matlab/C/Java, product performance characterization, system testing.
- To coordinate and perform a variety of independent and team activities involved in the collection, analysis, documentation and some interpretation of information/results.
- To undertake tasks which may include recording results and preparing reports including conclusions and recommendations. Write procedures manuals for data collection and coding.
- To provide guidance as required to any support staff and/or research students assisting with the research project, as agreed with the Principal Investigator/Grant holder.
- To present information on research progress and outcomes to the PI.
- To confer with the Principal Investigator in developing plans for research project and to discuss the interpretation of results and the preparation of manuscripts for publication.
- To work with industry/research partners (existing and planned) to identify their Connected Health needs (technologies and applications).
- To contribute to the publication of findings by assisting in compilation of the final report and presenting these findings to relevant bodies, both within UCC and external.
- To test and validate system performance under laboratory conditions.
- To pinpoint where improvements and/or advancements may be made.
- To continuously seek new methods of adding value by incorporating additional functionality on the platform.
- To work closely with team members who will be developing complementary aspects of the platform.
- To construct demonstrator devices for internal and external showcase.
- To participate in conferences, workshops and outreach events.
- To comply with all relevant regulatory legislation, ethical considerations and safety regulations.
- To enhance Tyndall's position internationally as a world leader in wireless sensing systems.
- To perform other related duties incidental to the work described herein.
- Participate in Education and Public Engagement activities, as required.
- Ensure all activities are compliant with the Tyndall Quality Management system.
- Ensure all activities are compliant with the required Health and Safety standards.
- Carry out any additional duties as may reasonably be required within the general scope and level of the post.

Essential Criteria

- A postgraduate qualification in a field of discipline relevant to the area of investigation i.e. MSc, MEngSc within the field of Biomedical engineering, Electrical and Electronic Engineering, or related area.
- Some research experience (typically 1 year) in data analytics of wearable sensors data for Connected Health and Wellness.
- An ability to work independently to a tight schedule.
- Capability of working effectively within a team to achieve results.
- Good oral and written skills for deliverable definition, and report/documentation writing, good time management skills, and interpersonal skills are essential.
- The successful candidate will be highly analytical and motivated with good interpersonal and organizational skills and be self-managed and achievement-oriented.

Desirable Criteria

The ideal candidate will have the equivalent of at least 2 years project experience in data analytics and wearable sensors. The candidate will need to have demonstrated a capability in the delivery of industry-aligned research projects as well as experience being part of a research team of researchers, engineers and students.

Informal enquiries can be made in confidence to Salvatore Tedesco at salvatore.tedesco@tyndall.ie

This position may be appointed on the IUA Scales for Research Assistants €22,609 - €35,218. Salary placement on appointment will be in accordance with public sector pay policy.

Application Instructions

Step 1 - Click [here](#) to download and complete the Application form and indicate the Job Reference ST-09.

Step 2 - Return the completed Application form, together with your CV and motivation letter to careers@tyndall.ie.

Please note that Garda vetting and/or an international police clearance check may form part of the selection process.

The University, at its discretion, may undertake to make an additional appointment(s) from this competition following the conclusion of the process.

At this time, Tyndall National Institute does not require the assistance of recruitment agencies.

Tyndall National Institute at University College, Cork is an Equal Opportunities Employer.