



OLLSCOIL NA GAILLIMHĒ  
UNIVERSITY OF GALWAY



## **Research Associate/Postdoctoral Researcher - Quantum Information Scientist**

**Irish Centre for High-End Computing (ICHEC), University of Galway**

**Ref. No. University of Galway 016-24**

Applications are invited from suitably qualified candidates for a full-time specific purpose position as a Research Associate/Postdoctoral Researcher - Quantum Information Scientist with the Irish Centre for High End Computing (ICHEC) at the University of Galway, Ireland. The position is available immediately, with flexibility to partly work from home in Ireland at our Dublin or Galway office.

### **Irish Centre for High-End Computing (ICHEC)**

ICHEC is Ireland's national centre for High-Performance Computing (HPC) providing digital infrastructure capabilities and expertise through R&D engagements and skills development programmes to academia, industry and public sector organisations.

With a highly ambitious leading-edge Strategy for 2021-2025, ICHEC provides infrastructure services and expertise in HPC and data intelligence to develop efficient platforms, solutions and services based on technologies including AI, high performance data analytics, Earth Observation, quantum computing and cybersecurity across several sectors including environmental sciences, healthcare, agriculture, energy, financial services and ICT.

ICHEC works in close partnership with a number of national and international researchers, enterprises and public authorities for joint R&D, skills development, and provisioning HPC and data services to accelerate their digital transformation and green transition.

For more details reach out to our Centre Technical Manager, Dr. Venkatesh Kannan or visit [www.ichec.ie](http://www.ichec.ie).

### **Job Description:**

The successful candidate will work on current or future projects as a part of the ICHEC Quantum Computing Activity which is one of the leading Quantum Computing Programmes in Ireland and Europe, working in close collaboration with national and international research groups and enterprise partners in the area of quantum computing technologies and its application.

### **Duties:**

The successful candidate will have the opportunity to

- work on R&D projects for modelling and simulation of systems (e.g. physics, electronic structure, noise) on quantum computer or simulator platforms (software emulated or hardware);
- work in close collaboration with external partners from research organisations and industry;
- interact with other tasks and project partners to gather requirements, discuss design and implementation;
- contribute to developing learning material and tutorials for training courses;
- contribute to other quantum computing projects and skills development activities at ICHEC at national and European levels.
- Any other duties assigned commensurate to this level of post.

This is a role for a highly motivated problem-solver, with a creative and analytical mind to build new solutions that will have a global impact.

### **Qualifications/Skills required:**

#### **Essential Requirements:**

- A Masters with 4 years of relevant experience or a Ph.D. in a domain relevant to quantum information, quantum computing, quantum algorithms, or similar (including tutoring, teaching).
- Experience in modelling and simulating quantum many-body systems (e.g. Hubbard, Heisenberg, Kitaev, or similar models) and/or principles of electronic structure (quantum chemistry) calculations.
- Demonstrable experience in one of the following languages: Python, C, C++, Julia, or similar.
- Exposure to at least one quantum programming or software development toolkit/framework such as IBM Qiskit, Atos QLM, Intel-QS, Google Cirq, Xanadu PennyLane, or others.

#### **Desirable Requirements:**

- Exposure to classical machine learning, natural language processing, neural networks, graph algorithms.
- Exposure to quantum algorithms (e.g. search, optimisation, QML), quantum computer/simulator modelling and/or noise characterisation.
- Knowledge of working on HPC systems, CI/CD pipeline and tools.
- Exposure to Agile/PRINCE2 project management frameworks.

**Salary:** Research Associate/Postdoctoral Researcher salary scale €42,782 - €54,965 per annum, (subject to the project's funding limitations), and pro rata for shorter and/or part-time contracts.

The default position for all new public sector appointments is the 1st point of the salary scale. This may be reviewed, and consideration afforded to appointment at a higher point on the payscale (subject to the project's funding limitations), where evidence of prior years' equivalent experience is accepted in determining placement on the scale above point 1, subject to the maximum of the scale.

[\(Research Salary Scales - University of Galway\)](#)

**Start date:** Position is available immediately.

#### **Continuing Professional Development/Training:**

Researchers at University of Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see [HERE](#) for further information.

Further information on research and working at University of Galway is available on [Research at University of Galway](#)

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

Further information about ICHEC is available at [www.ichec.ie](http://www.ichec.ie)

Informal enquiries concerning the post may be made to [careers@ichec.ie](mailto:careers@ichec.ie)

**To Apply:**

Applications to include a 1-page motivation letter, CV (**max. 3 pages**), and the contact details of three referees should be sent, via e-mail (**in a single PDF only**) to [careers@ichec.ie](mailto:careers@ichec.ie)

Please put reference number **University of Galway 016-24** in subject line of e-mail application.

**Closing date for receipt of applications is 5.00 pm (Irish Time) Monday, February 12, 2024**

We reserve the right to re-advertise or extend the closing date for this post.

University of Galway is an equal opportunities employer.

All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency based recruitment



An Roinn Breisoideachais agus Ardoideachais,  
Taighde, Nuálaíochta agus Eolaíochta  
Department of Further and Higher Education,  
Research, Innovation and Science

