



Ollscoil Mhá Nuad Maynooth University

Department of Computer Science /Department of Geography Full Stack Researcher/Developer (Specified Purpose Contract)

The Role

Maynooth University is committed to a strategy in which the primary University goals of excellent research and scholarship and outstanding education are interlinked and equally valued.

The City-Sense research project is a collaborative research project coordinated by Maynooth University and supported by Research Ireland's LERO Centre in partnership with Dublin City Council. The project will generate spatial-temporal datasets from various sources including Spaceborne Satellites, Drones, in-situ instruments, wide area sensor networks as well as GIS databases that can be integrated into a suite of urban based models, from simple surface energy models to more complex dynamical land surface models. A core output from the overall project will be the development of novel and automated methodological approaches to characterise urban building stock based on available, existing imagery which will be developed in collaboration with University College Dublin, a research partner.

We are seeking an experienced Full Stack Developer to work with the wider CitySense R&D team and lead on the research, development, testing and assessment of prototype Urban Modelling Web Apps and toolset - to support Policy-making and Municipal decision-making in planning and delivering healthier and more sustainable urban environments.

Key Responsibilities:

- Support the PIs (McCarthy, Fealy & Mills) and research team in designing, developing, testing and maintaining prototype full stack web applications to support research and development of digital cloud-based prototype Urban Modelling WebApps and services
- Contributing to guidance of wider technical research team members regarding conceptual web architecture design, relevant Open Source technologies & Open Standards
- Support the PI and Research Project Manager in monitoring progress and ensure project work-plan, tasks, deliverables together with key milestones are adhered to.
- Ensuring that all code is stored and managed.
- Lead on drafting and maintaining technical documentation
- Attend project meeting with research and funding partners. Support publications and conference presentations.



The ideal candidate will have:**Essential**

- A primary and/or ideally postgraduate degree in computer science or STEM, AND relevant professional experience.
- 4+ years hands-on experience of web development across the full stack, from database design and implementation (we use PostgreSQL), through backend server programming, to frontend client application development.
- Demonstrable coding and/or scripting experience with relevant programming languages and associated frameworks. Our current stack uses Python + Django/FastAPI, JavaScript/TypeScript + VueJS/Nuxt.
- Exposure to cloud environments and services including hosting infrastructure (we use Azure), with some experience of maintaining key web components e.g. Azure Functions, App Services, Static Web Apps, Virtual Machines etc.
- Comfortable working with version control and a working knowledge of CI/CD practices e.g. able to deploy a full-stack app to the cloud using Pull Requests and GitHub actions.
- Ability to execute research challenges, starting from problem definition to a working implementation.
- Previous experience working in team environments with limited supervision.
- Excellent written, verbal communication and presentation skills (English).
- Technical documentation and coding standards experience.
- Demonstrated ability of coordinating and guiding more similarly skilled technical staff including exposure to Agile delivery processes.
- Excellent organisational skills & interpersonal skills.
- Ability to work effectively under pressure and manage multiple deadlines.

Desirable

- Exposure to UI/UX and a willingness to engage with the design process.
- Experience of QA/Testing using Mocha, Cypress, or similar testing libraries and test-runners.
- An interest and willingness to engage and learn technical aspects of Earth Observation and Geospatial technologies (GIS, Geo-Coding Environments etc.).
- Expertise in bespoke software development using ESRI or Open-Source geospatial libraries. Some experience with Open Layers and/or other mapping libraries such as Leaflet would be highly desirable.



- Experience working in a commercial or research environment involving computational applications or research.

Faculty and Research Institutes

The Faculty of Science and Engineering comprises the Departments of Biology, Chemistry, Computer Science, Electronic Engineering, Experimental Physics, Theoretical Physics, Mathematics and Statistics, and Psychology. The Faculty of Social Sciences includes the Department of Geography amongst others. The role of both Faculties is to co-ordinate the academic activities of individual departments, to oversee the strategic development of departments, and to support interdepartmental activities and programmes. The University has also developed a number of interdisciplinary Institutes to support excellent research and to build research capacity across disciplines.

Particularly relevant to this project are the following interdisciplinary centres of which the Co-Principal Investigators (Fealy and McCarthy) are members.

National Centre for Geocomputation (NCG)

The NCG is a leading centre for research in the field of Geocomputation, applying computational methods to large spatial data sets from acquisition to analysis, modelling and visualisation. As a leading research centre, the NCG is committed to:

- Extending the understanding and utilisation of spatial data from postgraduate programmes to national and international research project engagement
- Applying existing geotechnologies to specific problems for enhanced decision making
- Developing new innovative technologies and applications for real-time response to real world challenges

ICARUS

The Irish Climate Analysis and Research Units (ICARUS) as part of the Department of Geography at Maynooth University is a national leader in the area of climate change providing integrated climate system research, solutions, data and advice to the scientific community, policy makers and for the benefit of society both nationally and internationally.

Research undertaken at ICARUS aims to advance fundamental understanding of past, present and future climate variability and change, and to provide cutting edge analysis of future impacts, vulnerabilities and adaptation in line with strategic national and international priorities.

In delivering these aims core research strands in ICARUS are focused on the analysis of change in atmospheric, terrestrial and marine environments, palaeoclimatology, regional climate modelling, catchment hydrology and water management and the assessment of environmental and socio-economic impacts and adaptation. ICARUS hosts both taught and research postgraduate students.

Department of Computer Science

The Department of Computer Science provides a wide range of undergraduate and postgraduate degree courses in Computer Science, Software Engineering, Multimedia and Mobile Systems along with an extensive research programme leading to M.Sc. and Ph.D. degrees in many exciting areas.

Computers have become a part of everybody's daily life, and in the Department of Computer Science we teach how computer systems work, with a particular focus on software, and we research into how computer systems will develop into the future. Our courses cover a wide spectrum of topics from software to computer hardware, from internal details of operating systems to computer applications, and from software engineering practice to computational theory. Our approach is to instill a thorough understanding of fundamental principles, while developing analytical abilities and practical skills.

We provide excellent facilities for practical work, with most of our modules including a mix of lectures and lab work. Many of our students also spend time working in industry as part of their course. We endeavour to provide a supportive and enjoyable atmosphere for learning - we provide a programming



helpdesk, extensive assistance during practical work - and we are always available outside of lectures to help our students.

Department of Geography

The Department of Geography offers undergraduate and postgraduate degrees delivered in a vibrant learning environment. Based on its research strengths in Climate Change, Environmental Change, Spatial Planning and Place-Making, the Department offers courses to about 500 FTE undergraduate and postgraduate students, including three Masters Programmes (Geography, Climate Change, and GIS and Remote Sensing). The department hosts the Irish Climate Analysis and Research Units (ICARUS) which has a vibrant community of faculty, post-doctoral and postgraduate students investigating a range of aspects of the Irish and global climate. Staff in Geography are internationally recognized for their scholarship and service in both Physical and Human Geography and take leading roles in national and international learned societies.

The University

Maynooth University is a very distinctive university, a collegial institution focused on science and engineering, humanities, and social sciences, and equally committed to research, teaching and community engagement. Located in Ireland's only university town, its distinctive features and character owe much to its unique history and heritage. It provides a high-quality educational experience to over 15,000 students on a campus with 18th century roots and 21st century dynamism.

The strategic trajectory and accomplishments of Maynooth University, in the 25 years since its establishment as an autonomous public university, are exceptional, and a source of great pride to the university community, staff, students and alumni. Maynooth University in 2024 ranked in the top 90 global Times Higher Education (THE) Young University rankings, placing 86th in the world. Maynooth University's growing global reputation is based on the originality, quality, importance and impact of its research and scholarship, commitment to teaching and learning, the quality of academic programmes, and its leadership in widening participation in higher education. The sources of success are the dedication of its staff and the energy and engagement of its students.

Maynooth University is a place of lively contrasts – a modern institution, dynamic, rapidly-growing, research-led and engaged, yet grounded in historic academic strengths and scholarly traditions. With over 15,000 students Maynooth offers a range of programmes at undergraduate, postgraduate and doctoral level in the humanities, science and engineering and social sciences, including business, law and education. The University also offers a range of international programmes and partnerships.

Maynooth's unique collegial culture fosters an interdisciplinary approach to research, which its world-class academics bring to bear in tackling some of the most fundamental challenges facing society today. The University's research institutes and centres consolidate and deliver this impact as vibrant communities of learning, discovery and creation. Research at Maynooth also is very much central to its teaching and the University prides itself on placing equal value on its research and teaching missions.

Maynooth University's Values

Our values define who we are, what we believe in and how we act as a community. They underpin our future success and guide our expectations of ourselves and each other. Our values apply to everyone in the University community:

- Integrity
- Collegiality



Athena
Swan
Ireland



Athena
Swan
Bronze Award



HR EXCELLENCE IN RESEARCH



Taighde Éireann
Research Ireland

- Responsibility
- Freedom of expression
- Ambition

Maynooth University Strategic Plan 2023 – 2028

The University's Strategic Plan 2023 - 2028 builds on our rich academic history and strong foundations to set out an ambitious and forward-looking path for the future of our University. This roadmap underscores our commitment to adapt to a changing world while staying true to our values. Our vision is to be a university of excellence, opportunity and impact, having a significant stake in all three.

For more information about Maynooth University's future direction, please visit:
<https://strategy.maynoothuniversity.ie/>

Plean Straitéiseach Ollscoil Mhá Nuad 2023 - 2028

Tógann Plean Straitéiseach na hOllscoile 2023 - 2028 ar ár stair acadúil shaibhir agus ar ár mbunchlocha láidre chun conair uailmhianach agus cheannródaíoch a leagadh amach do thodhchaí ár nOllscoile. Soiléiríonn an treochlár seo ár dtiomantas do dhul i dtaithí ar dhomhan atá ag síorathrú agus ár ngníomhaíochtaí a chur in oiriúint dó, agus san am céanna a bheith dílis dár luachanna Ollscoile. Is í an fhís atá againn a bheith mar ollscoil feabhais, deiseanna agus tionchair, agus lámh láidir a bheith againn i ngach ceann de na trí ghné seo.

Léigh anseo le haghaidh breis eolais faoi thodhchaí Ollscoil Mhá Nuad:
<https://strategy.maynoothuniversity.ie/?lang=ga>

Our Strategic Plan sets out an ambition to be an excellent place to learn and work, and an inclusive community where students and staff can flourish and make a distinctive contribution to the national system of higher education and the public good. Achieving this requires staff to have a strong sense of connection to the University and support from colleagues. We recognise that our people are our greatest resource and actively seeks to attract, develop, and retain a talented workforce by creating a positive and welcoming University environment. As well as offering a competitive salary, access to a public sector pension scheme, and annual leave allowance, the University also provides other facilities and benefits including, but not limited to:

- Family-friendly leave schemes
- Tax Saver travel scheme and Cycle to Work scheme
- On-campus crèche
- On-campus restaurants and coffee shops
- Employee Assistance Programme
- Health and Well-Being programmes
- Education support opportunities
- Continuous Professional Development opportunities, including leadership programmes, mentoring, Aurora programme.
- Study and Exam leave
- Sports facilities and gym

To learn more about being part of the Maynooth University team, please visit our website at <https://www.maynoothuniversity.ie/human-resources/come-work-with-us>



Selection and Appointment

- Only shortlisted candidates will be invited to attend for interview;
- Candidates invited for interview will be required to make a brief presentation;
- Appointments will be approved by the President based on the report of the selection board;
- It is anticipated that interviews will be held in October 2025.
- The appointment is expected to be effective as soon as possible thereafter.

Equality and Diversity

Maynooth University actively works to ensure equality, celebrate the diversity of our community, and promote inclusion. To learn more about our commitment to Equality and Diversity, please read the Maynooth University [Equality and Diversity Policy](#) / [Polasaí Comhionannais agus Éagsúlachta](#), our policy on the [Employment of People with Disabilities](#), and our [Gender Equality Action Plan 2023-2026](#). We aim to reflect the diversity of the community we serve and welcome applications from all individuals across our society.

Terms and Conditions

Tenure	This is a full-time, temporary post for a specified purpose, anticipated to be 8 months in duration. Project end date is currently anticipated to be 30 June 2026.
Location	The place of work is the campus of Maynooth University, Maynooth, Co. Kildare.
Salary	Salary Scale: €65,889 - €71,796 p.a (Point 1 - 4) Appointments will be made in accordance with public sector pay provisions.
Hours of work	A 37-hour working week is in operation in respect of full-time positions (pro-rated for part-time positions). This can be reviewed or adjusted from time to time through national agreements.
Annual Leave	Annual leave and public holidays are provided for in the University policy: https://www.maynoothuniversity.ie/human-resources/policies/annual-leave-policy Annual leave will be allocated on a pro-rata basis for part-time and temporary positions.
University policies and schemes	Employees of the University will be subject to the terms of the University policies and schemes, available on the University website at: https://www.maynoothuniversity.ie/university-policies https://www.maynoothuniversity.ie/human-resources/policies



Athena
Swan
Ireland



Pension	<p>This is a pensionable post. Employees of the University will enter into a public sector pension scheme, and as such, applicants must ensure they are eligible to become a member of a public sector pension scheme for the duration of the appointment. Details of the public sector pension schemes are available at:</p> <p>https://www.maynoothuniversity.ie/human-resources/pension-information</p>
Eligibility	<p>Applicants should note that eligibility is determined by the Department of Enterprise, Trade and Employment. Further information regarding eligibility is available at:</p> <p>https://enterprise.gov.ie/en/what-we-do/workplace-and-skills/employment-permits/employment-permit-eligibility/</p> <p>Non-EEA applicants are responsible for ensuring they can secure a visa to travel to Ireland. Any offer of employment is conditional on applicants securing the appropriate employment permissions.</p> <p>Former Irish Public Service employees - Certain Restrictions on Eligibility</p> <p>Eligibility of applicants formerly employed by an Irish Public Sector body, and who availed of an Irish Public Service Redundancy or Incentivised Retirement Scheme under the Schemes below, may be affected:</p> <ul style="list-style-type: none"> • Collective Agreement: Redundancy Payments to Public Servants • Incentivised Scheme for Early Retirement (ISER) • Department of Health and Children Circular (7/2010) • Department of Environment, Community & Local Government (Circular Letter LG(P) 06/2013) <p>Applicants should ensure that they are eligible to be re-engaged in the Irish Public Service under the terms of such Schemes. Applicants should address queries with their former Irish Public Sector employer.</p>
Garda vetting	Garda vetting or clearance may be required by the University.
Medical	The University may require a medical examination as a condition of employment.

Data Protection Law

Applications to the University will be treated in accordance with the University Data Protection Policies. For information on the University's Data Protection Policies and Privacy Notice, please see our website: <https://www.maynoothuniversity.ie/data-protection>

Application Procedure

Closing Date:

23:30hrs (local Irish time) on **Sunday 28th of September 2025.**



Please note all applications must be made via our **Online Recruitment Portal** at the following link:

<https://www.maynoothuniversity.ie/human-resources/vacancies>

Applicants should submit a CV along with a cover letter. The cover letter should be a research statement of up to 4 pages articulating suitability for the position. Candidates are free to choose the content for their research statement as they please, keeping the job description and above criteria in mind; suggested topics include (a) research vision and plans, and (b) justification of why experience, interests and research plans make them an ideal candidate.

Applications must be submitted by the closing date and time specified above. Any applications which are still in progress at the closing time on the specified closing date will be cancelled automatically by the system.

Late applications will not be accepted.

Maynooth University is an equal opportunities employer

The position is subject to the Statutes of the University



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Bronze Award



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