

Post Specification [DRAFT]

Post Title:	Research Fellow
Post Status:	Specific Purpose Contract – Full-time.
Research Group / Department / School:	Graphics Vision and Visualization Group, School of Computer Science and Statistics, Trinity College Dublin, the University of Dublin
Location:	Stack B, Custom's House Quay, Trinity College Dublin, the University of Dublin College Green, Dublin 2, Ireland
Reports to:	Dr. John Dingliana
Salary:	Appointment will be made on IUA Researcher Salary Scale at a point in line with Government Pay Policy [€40,023 to €46,109 per annum], appointment will be made no higher than Point 3 on the PD1 Post-Doctoral Researcher scale.
Hours of Work:	Typically, 9:00am to 5:00pm Mon-Fri. Some work may fall outside these hours if necessitated by time-limited requirements of the project. Flexible hours supported where not in contravention of Project Requirements.
Closing Date:	14th December, 2022 Ongoing. Position re-opened due to staffing changes

Post Summary

A postdoctoral researcher position is available with the Graphics and Vision Discipline in the School of Computer Science and Statistics (SCSS), Trinity College Dublin (TCD) to work on a research project funded by Horizon Europe. The project, TransMIXR [<https://transmixr.eu/>], is a collaborative EU project involving 20 partners from industry and academia with the goal of creating novel human-centric tools for remote content production and consumption via social virtual reality.

Start date: 16th January, 2023 or as soon as possible thereafter

Standard Duties and Responsibilities of the Post

The postdoctoral researcher will work closely in collaboration with colleagues in TCD and the multi-institutional project consortium, towards the completion of several Work Packages of the TransMIXR project.

The postdoctoral researcher will be primarily responsible for research in AI and deep learning techniques for the *SEMANTIC UNDERSTANDING OF VOLUMETRIC VIDEO*. The objective of this work package is to allow better usage and integration of such content into XR experiences. The research will focus on achieving temporal consistency through geometry tracking and correspondence estimation, automated rigging and semantic 3D segmentation and understanding of 3D geometry in volumetric video. The developed algorithms will be applied in use cases and demonstrators.

In addition, the postdoctoral researcher will collaborate with the multidisciplinary partners in the TransMIXR consortium, contributing technical efforts towards other project activities including but not limited to:

- Design and development of an *EXTENDED REALITY MEDIA COLLABORATIVE CREATION ENVIRONMENT* that will enable story creators to collaborate in a distributed manner, allowing them to interact, manipulate, and combine content to produce novel XR media experiences.
- Design and development of an *EXTENDED REALITY MEDIA EXPERIENCE ENVIRONMENT* that will leverage a range of technologies (including volumetric video, 360 and 2D video, motion capture animation, web and social media content) to enable active

immersive content consumption experiences for end users, facilitating multimodal and naturalistic interactions with physical and virtual objects, and realisation of shared social XR experiences.

- *Development and DEPLOYMENT OF USE-CASE PILOTS:* The postdoctoral researcher will collaborate with end-user domain partners (including news media, performing arts and cultural heritage) and technology providers to develop use-case pilots that demonstrate the impact of XR creation workflows and experiences environments, in particular working to ensure compatibility and technical interoperability of the XR technological components during development.
- *COMMUNICATION AND DISSEMINATION:* The postdoctoral researcher will participate in publishing results and increasing the visibility of the project among targeted communities and the public.

Funding Information

Horizon Europe

Person Specification

Qualifications

PhD in Computer Science or closely related discipline with a significant background in Computer Vision and Deep Learning.

Knowledge & Experience

- *Essential:* completed PhD in Computer Vision or at least 2 years of research experience in Computer Vision
- *Essential:* professional or academic research experience in the areas of Augmented and Virtual Reality and Volumetric Video
- *Desirable:* awareness and understanding of volumetric video content creation and algorithms for capture, processing and storage of volumetric video data
- *Desirable:* experience with human body pose tracking and modelling
- *Desirable:* experience in computer graphics and graphics engines such as Unity 3D or Unreal Engine

- *Desirable:* experience publishing and presenting papers in high-impact international journals and conferences

Skills & Competencies

- Excellent problem solving abilities
- High Level of competence in software development and programming
- Skills and experience with state-of-the-art in computer vision and deep learning
- Effective written and verbal communication skills with ability to present complex information effectively to a range of audiences
- Good organisational skills and ability to prioritise workload and work to exacting deadlines
- Ability to work collaboratively and as part of a team, including on large collaborative projects with inter-institutional and international partners

Application Procedure

Applicants should submit a full Curriculum Vitae to include the names and contact details of 2 referees (including email addresses), to:-

John Dingliana

John.Dingliana@tcd.ie

Further Information for Applicants

URL Link to Area	www.tcd.ie
URL Link to Human Resources	https://www.tcd.ie/hr/

Trinity College Dublin, the University of Dublin

Trinity is Ireland's leading university and is ranked 108th in the world (QS World University Rankings 2020). Founded in 1592, the University is steeped in history with a reputation for excellence in education, research and innovation.

Located on an iconic campus in the heart of Dublin's city centre, Trinity has 18,000 undergraduate and postgraduate students across our three faculties – Arts, Humanities, and Social Sciences; Engineering, Mathematics and Science; and Health Sciences.

Trinity is ranked as the 17th most international university in the world (Times Higher Education Rankings 2020) and has students and staff from over 120 countries.

The pursuit of excellence through research and scholarship is at the heart of a Trinity education, and our researchers have an outstanding publication record and strong record of grant success. Trinity has developed 19 broad-based multidisciplinary research themes that cut across disciplines and facilitate world-leading research and collaboration within the University and with colleagues around the world. Trinity is also home to 5 leading flagship research institutes:

- Trinity Biomedical Sciences Institute (TBSI)
- Trinity College Institute of Neuroscience (TCIN)
- Trinity Translational Medical Institute (TTMI)
- Trinity Long Room Hub Arts and Humanities Research Institute (TLRH)
- Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN)

Trinity is the top-ranked European university for producing entrepreneurs for the past five successive years and Europe's only representative in the world's top-50 universities (Pitchbook Universities Report).

Trinity is home to the famous Old Library and to the historic Book of Kells as well as other internationally significant holdings in manuscripts, maps and early printed material. The Trinity Library is a legal deposit library, granting the University the right to claim a copy of

every book published in Ireland and the UK. At present, the Library's holdings span approximately 6.5 million printed items, 400,000 e-books and 150,000 e-journals. With over 120,000 alumni, Trinity's tradition of independent intellectual inquiry has produced some of the world's finest, most original minds including the writers Oscar Wilde and Samuel Beckett (Nobel laureates), the mathematician William Rowan Hamilton and the physicist Ernest Walton (Nobel laureate), the political thinker Edmund Burke, and the former President of Ireland Mary Robinson. This tradition finds expression today in a campus culture of scholarship, innovation, creativity, entrepreneurship and dedication to societal reform.

Rankings

Trinity is the top ranked university in Ireland and ranked 108th in the world (QS World University Rankings 2020). Trinity ranks in the top 50 in the world on 4 subjects and in the top 100 in 18 subjects (QS World University Rankings by Subject 2020). Full details are available at: www.tcd.ie/research/about/rankings.

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