

# XR Designers and 3D Game Development



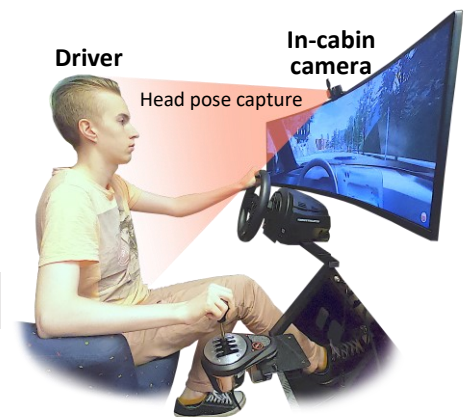
**ULTRA VIDEO GROUP** is looking for several motivated BSc/MSc/PhD students to kick-start the career as a part of the leading academic video group in Finland (<http://ultravideo.fi/>). We are a research group in the unit of [Computing Sciences](#) at [Tampere University](#) and we have over 20-year experience in conducting pioneering research on media processing systems in a close collaboration with industry. Our main research interest lies in tailored video coding, processing, and streaming solutions on various platforms ranging from low-power embedded devices to highly distributed cloud environments. Our primary research focus is on:

- VVC and HEVC video encoding and streaming
- Vision-based environment perception for human/machine consumption
- Photorealistic modelling of future driving and transportation
- Video codec acceleration on embedded platforms with high-level synthesis
- Content-aware video coding, annotation, and tagging
- Volumetric video coding for extended reality (XR)

## Job description

We are in search of multiple BSc/MSc/PhD students to join our XR team. The open positions include:

- Development of a photorealistic urban digital twin of Hervanta in Unreal Engine 4 for smart city simulation
- Design and implementation of a virtual toolbox for interactive driver and traffic simulation
- Virtual prototyping of computer vision applications for semi-autonomous vehicles
- Modelling and simulation of vehicle dynamics in a realistic virtual test environment
- Development of point cloud compression techniques for real-time XR communication
- Performance optimization of 5G volumetric video streaming.



**iThruS**



## Qualifications

### Essential skills (only one required):

- Programming experience in a language such as C++, C, C# or Python
- 3D modelling

### Desirable skills:

- 3D game development experience with Unreal Engine, Unity, Godot or other engines/frameworks
- DirectX, OpenGL, Vulkan or other rendering APIs
- Shading languages such as GLSL or HLSL
- XR development
- Linear algebra, mainly vectors

## How to apply

Each position will be tailored to the applicant's skills, background, and level of studies, incl. the starting date and working time. To apply, please complete the following form

<https://forms.office.com/r/9CZ2k7AC3S>

with your resume and transcript of records. The closing date for applications is **November 14<sup>th</sup>, 2022** (at 23.59 EET / UTC+2). Interviews will be started on a rolling basis.

## Contact

For more information or any questions regarding the application, please contact:

- Doctoral Researcher Marko Viitanen [marko.viitanen@tuni.fi](mailto:marko.viitanen@tuni.fi)
- Associate Professor Jarno Vanne [jarno.vanne@tuni.fi](mailto:jarno.vanne@tuni.fi)