

Development of 5G Video Streaming for Drones



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)

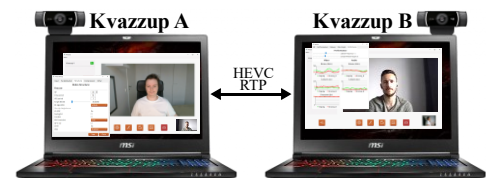
Job description

The project aims at improving the state-of-the-art in real-time video streaming by developing features to our popular real-time streaming library `uvgRTP`.

The RTP protocol forms the backbone of real-time communication, providing a low latency way of communicating. The potential applications include video conferences, remote presence, drone controls and more.

In this job, you will be tasked to make our RTP/SRTP library `uvgRTP` (<https://github.com/ultravideo/uvgRTP>) more robust against adverse network conditions and to also adapt various scenarios such as transmission within 5G networks, and remote control of drones. The job can also be extended to other streaming protocols for content delivery, similar to YouTube, Netflix and Twitch.tv.

We are searching for a BSc/MSc student. The knowledge acquired in this job can open variety of opportunities within our group or in companies that have needs in video transmission.



Qualifications

Essential skills:

- C/C++

Beneficial skills:

- Knowledge in network transmission
- Knowledge in video compression

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 14th, 2022** (at 23.59 EET / UTC+2). Interviews will be started on a rolling basis.

Contact

For more information, or any question regarding the application, please contact (in English, Finnish, or French):

- Doctoral Researcher Joni Räsänen joni.rasanen@tuni.fi
- Associate Professor Jarno Vanne jarno.vanne@tuni.fi