

Embedded Video Encoder Development with High-Level Synthesis



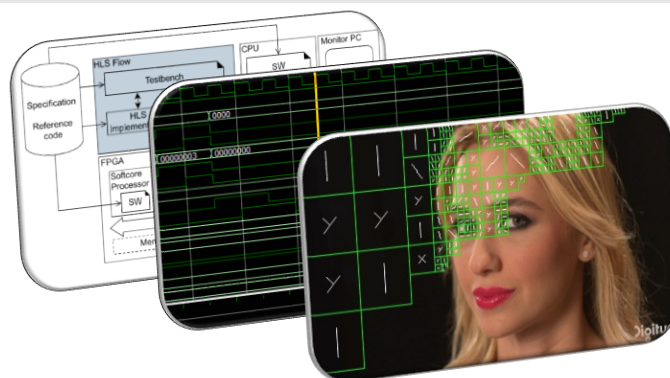
ULTRA VIDEO GROUP is looking for several motivated BSc/MSc/PhD students to kick-start the career as a part of the leading academic video group in Finland (<http://ultravideo.fi/>). We are a research group in the unit of [Computing Sciences](#) at [Tampere University](#) and we have over 20-year experience 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 embedded hardware HEVC video codec team. The open positions include:

- High-level synthesis implementation of HEVC coding tools on FPGA.
- Migration of HEVC video encoder from FPGA to ASIC.
- Implementation of a fully embedded HEVC encoder on a prototype SoC.
- Development of an AI-enhanced embedded HEVC encoding/vision pipeline onboard a drone.
- Development of low-latency embedded HEVC encoding and 5G video streaming from a drone.



Qualifications

Essential skills:

- Programming experience in a language such as C++, C
- Basic knowledge of embedded systems and hardware designing, e.g., passed course on the subject

Desirable skills:

- High-Level Synthesis
- VHDL
- Verilog
- SystemC
- SystemVerilog

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 Panu Sjövall panu.sjovall@tuni.fi
- Associate Professor Jarno Vanne jarno.vanne@tuni.fi