

# Development of Test Automation Framework of Video Codecs with Python



**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 to develop new features in our open-source test automation framework called `uvgVenctester`.

Digital video has become ubiquitous in our everyday life thanks to a myriad of media applications that strive for in-depth immersion through increasingly bandwidth-greedy video formats. To mitigate the pervasive growth of video data, several video coding standards have been released during the past couple of decades. The development of these technologies requires comprehensive performance and conformance testing of video encoders. To simplify this task, we have developed our automation framework (<https://github.com/ultravideo/uvgVenctester>).

The goal of this project is to continue its development with the following main features:

- Add a cluster support
- Improve data analysis with Pandas (<https://pandas.pydata.org/>)
- Develop an innovative solution of design space exploration to select the best encoding parameter settings according to the encoding complexity



## Qualifications

### Essential skills:

- Python

### Desirable skills:

- Knowledge in video compression
- Pandas, matplotlib, zmq or other distribution framework experience

## 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 question regarding the application, please contact (in English, Finnish, or French):

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