

PhD position in perceptual evaluation of immersive visual or audio-visual quality

FORCE technology, has an open PhD position (early-stage researcher) in the H2020 MSCA ITN RealVision project (www.realvision-itn.eu/) within the SenseLab department. The RealVision Innovative Training Network (ITN) will investigate the problem of capturing, processing and displaying hyper-realistic images and immersive visual and audio-visual systems. The ITN project targets building hyper-realistic visual imaging and display systems of the future and assessing their performance physically/perceptually.

Description of PhD project

- To develop novel techniques for the perceptual evaluation of visual or audio-visual quality in immersive and next generation audio-visual systems
- To adopt and adapt the latest methods from the sensory sciences (taste, smell, hearing) for evaluation of visual or audio-visual perceptual characteristics and quality.
- The project is focused upon immersive systems focus upon visual or audio-visual quality. Identification and tests of relevant perceptual attributes for immersive visual or audio-visual quality evaluations using test subjects. Development and evaluation of novel and efficient perceptual test methodologies adopted from the sensory sciences for assessing Quality of Experience within the immersive video domain focusing on HDR and UHD technology and novel video technologies. In order to evaluate the quality characteristics as well and naturalness and realism of hyper-realistic video, novel evaluation techniques are to be developed. Objective and physiological measurements (GSR, pupil dilation, eye tracking, etc.) will be made in parallel with the quality assessment. Analysis of these data will allow for in-depth understanding of the characteristics affective quality, naturalness and realism for different use cases. Preference mapping methods will be used for acquiring information about the relationship with attributes using mixed-model data analysis to establish causal relationships with preference or naturalness evaluations. The project aims to produce:
 - Novel method for subjective and physiological measurement of realism and naturalness of hyper-realistic video with audio.
 - Metrics or predictive models of visual or audio-visual quality.

During the project, the PhD candidate will have close contact with the other RealVision consortium groups, including an extended research stay at University of Nantes, France. In order to ensure contact with industry, the ESR will also have an extended research stay with the RealVision partner organisation DxO, France.

We offer extensive knowledge of all steps in perceptual and sensory evaluation techniques with dedicated laboratories, tools and assessor panel for performing perceptual evaluations, providing an exciting environment study and develop immersive or hyper-realistic audio/visual systems of the future.



If you are interested, please check the FORCE Technology web pages about this role: www.forcetechnology.com.

Qualifications

The candidate should have a master's degree in electrical, electronics, computer science, telecommunications, mathematics, sensory science or a similar degree with an academic level equivalent to the master's degree.

A solid background in image/video, audio processing or subjective quality evaluation will be an asset. We expect the candidate to have experience in perceptual evaluation and programming skills. Good communication skills in written and spoken English are a must. Starting date is Winter 2018 early 2019.

Approval and Enrolment

The scholarships for the PhD degree are subject to academic approval, and the candidates will be enrolled in a 3-years doctoral program (resulting in a PhD degree awarded by Technical University of Denmark - DTU). For information about the requirements for enrolment and the general planning of the scholarship studies, please refer to the [DTU PhD Guide](#).

Assessment

The assessment of the applicants will be made by Professor Søren Forchhammer (sofo@fotonik.dtu.dk), Dr Nick Zacharov (nvz@force.dk) in accordance with RealVision recruitment procedures.

Salary and appointment terms

The salary and appointment terms are consistent with the current rules for PhD degree students. The period of employment is 3 years. The yearly salary before tax will comprise a living allowance of €50,494 and a mobility allowance of €7,200.00. An additional allowance of €3,000.00 may be payable but is dependent on individual family circumstances. Salary will be payable in Danish Krone.

Further information, please contact

- Information regarding the post and FORCE Technology:
 - Dr Nick Zacharov Lead Technologist, FORCE Technology, SenseLab, tel. +358 44 555 4933, nvz@force.dk
- Information regarding Danish Technical University matters:
 - Prof Søren Forchhammer, DTU Fotonik, sofo@fotonik.dtu.dk,

You can read more about the FORCE Technology from: <https://senselab.madebydelta.com/>

Application

Please submit your online application no later than **5th November 2018**. Please send your applications to: nvz@force.dk. Interviews will be held during mid-November.

Applications must include:

- A letter motivating the application (cover letter)
- Curriculum vitae
- Grade transcripts and BSc/MSc diploma (an official translation into English)
- Excel sheet with translation of grades to the Danish grading system (see DTU guidelines and [excel spreadsheet here](#))



Candidates may apply prior to obtaining their master's degree but cannot begin before having received it.

Due to the mobility requirement of the European Commission for ITN projects, we can only accept PhD candidates that have not been working/living in Denmark for more than a total of 12 months within the last 3 years.

All interested candidates irrespective of age, gender, race, disability, religion or ethnic background are encouraged to apply.