2018-00632 - Computational Video Editing for Stage Performances

**Contract type:** Public service fixed-term contract
**Level of qualifications required:** Graduate degree or equivalent
**Function:** PhD Position

**About the research centre or Inria department**

Grenoble Rhône-Alpes Research Center groups together a few less than 800 people in 35 research teams and 9 research support departments.

Staff is localized on 5 campuses in Grenoble and Lyon, in close collaboration with labs, research and higher education institutions in Grenoble and Lyon, but also with the economic players in these areas.

Present in the fields of software, high-performance computing, Internet of things, image and data, but also simulation in oceanography and biology, it participates at the best level of international scientific achievements and collaborations in both Europe and the rest of the world.

**Context**

**Context**: This PhD thesis is proposed as part of an ongoing collaboration between computer scientists and performing arts researchers at Univ. Grenoble Alpes and INRIA. The goal of the PhD thesis will be to propose novel interaction techniques to students, professors and researchers in the performing arts for making movies from stage performances recorded on stage. The one hand, we will propose novel algorithms for editing cinematographic rushes together into movie clips automatically, based on computational models of film editing. Ideally, the proposed techniques should be completely non-invasive (not requiring sensors on actors or on stage) and intuitive enough to be used by performing arts students, professors and researchers, without any expertise in video production.

**Assignments**

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**Main activities**

Research, design and implement algorithms for video editing using recordings of theatre performances annotated with (incomplete) actors identities and poses. This will include implementing state-of-the-art speech recognition and speaker diarization methods for recognizing speaking actions and adapting them to the case of live performances.

Design and implement graphial user interfaces for interacting with the above algorithms.

Create and annotate datasets of rushes and edited movies suitable for training and testing the above methods.

Evaluate results both on an objective and a subjective basis.

**Skills**

**Languages**: Candidate must be fluent in French and English.

Open-minded: Candidate must have in interest in performing arts (theatre, dance and music) and be willing to work in a highly inter-disciplinary group of researchers in computer science, arts and humanities.

**Benefits package**

- Subsidised catering service
- Partially-reimbursed public transport
- Social security
- Paid leave
- Flexible working hours
- Sports facilities