

## Advertisement

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# Master Thesis

## Video classification based on frame-level feature extraction

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The concept of cloud gaming (CG) is to render a video game in the cloud and stream the game scenes as a video to players and receiving back the input commands over a broadband network. CG has rapidly expanded its market among gamers and drawn a lot of attention from researchers and businesses. Besides the opportunity that cloud gaming is offering, it still suffers from limited bandwidth. Video games are not equally complex and depends on their video complexity different encoding strategy can be applied.

The aim of this thesis is to extract frame-level features, such as motion vectors, edge information and color diversity and classify a set of video game sequences into three classes.

The applicant needs to have experience with video/image feature extraction and be familiar with basic machine learning methods (classification algorithm).

### Responsibilities/ Preliminary work plan

- 4 Weeks - Literature review
- 2 Weeks- Data collection (recording video sequences)
- 6 Weeks - Required Implementation + testing the different methods
- 6 Weeks – Implementation + Data Analysis + Discussion on improvement
- 2 Weeks – Refining the code + Documentation for the developed method
- 4 Weeks - Thesis writing

### Requirements

- Study subject: computer science, human computer interaction, or similar
- Fair programming skill (preferably python-openCV, and matlab)
- Familiar with shell scripting
- Interest in topics like Human-computer-interaction, Gaming Quality of Experience
- Very good English skills (B2)
- Basic knowledge of machine learning

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