PROJECT TITLE: Video Summary generation – Knapsack problem

Physical Requirement: Not applicable.

Project's Technical Skills Requirement: Basic Knowledge of Python Programming, Experience in Dynamic Programming is preferred

Project's Available Positions: Undergraduate Co-Op, MSc Position

Mehdi Norouzi, norouzmi@ucmail.uc.edu, 513-549-3435

Project Description

Summarizing Videos using Deep learning models received significant attention in recent years; Movie highlight creating, Sport video summary, Anomaly detection in Surveillance videos.

Researchers generate video summaries selecting video shots that are important (describe the video storyline). Limiting video summary length (e.g., 15% of the original video length), the video shot selection problem is defined as a knapsack problem in which video shot importance score and video shot length are used for video summary generation.

Recent studies [1] have shown that the state-of-the-art knapsack solving techniques (e.g. dynamic programming) tend to pick video shots that are short ignoring important long shots, and heavily affecting the video summaries generated.

In this project, you will study the state-of-the-art techniques for generating video summaries, learn from the previous studies we’ve done in our group, and try to improve the current techniques working alongside graduate students.

Reference: