

Exercise Sheet 08

(Shot Detection)

Please note: The exercises will be neither collected, nor corrected, or graded.

Exercise 1 – Shot Detection

- What is the general structure of a video?
- What are the issues with using the Template Matching technique for shot detection?
- What problem does Twin-Thresholding solve?
- How can we perform shot detection on compressed videos without decompressing them?

Exercise 2 – Temporal Models

- What are the problems that arise if we model the shot boundaries as a series of events through the Poisson process?
- In a very small training collection we have information about the duration of 15 shots:

2,94	2,91	3,83	5,57	7,53
3,98	3,78	3,19	3,63	2,87
5,86	4,88	2,75	1,25	4,29

Considering that the shot durations are Erlang-distributed, estimate the parameters r and λ of this distribution as described in the lecture.

Note: According to film theory, r is small. For this reason we shall consider it as taking values between 1 and 10, with a step of 1. To furthermore simplify the problem, consider that the continuous variable λ , varies between 0.01 and 10 with a step of 0.01.