Video abstraction & stylisation

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OVERVIEW

Non-photorealistic rendering (NPR) is an area of computer graphics that studies a wide variety of artistic styles for expression and abstraction.
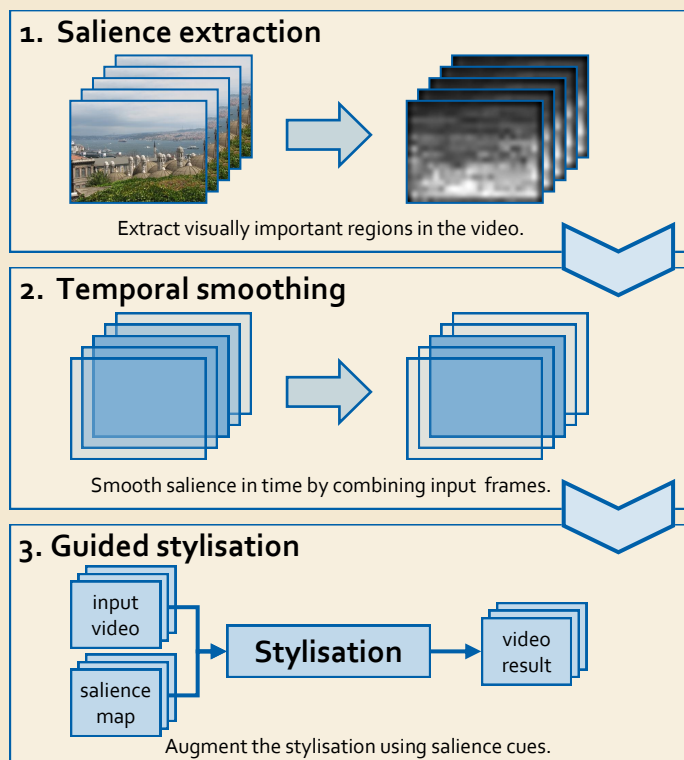
MOTIVATION

– Prototyping visual effects for motion pictures
– Expressing emotions through stylisation

RESEARCH GOALS

My aim is to create novel video stylisations.

1. By extending existing frame-based methods to create temporally coherent stylised videos.

2. By using low-level salience cues to guide novel video stylisation procedures.

CURRENT WORK

1. Salience extraction

Extract visually important regions in the video.

2. Temporal smoothing

Smooth salience in time by combining input frames.

3. Guided stylisation

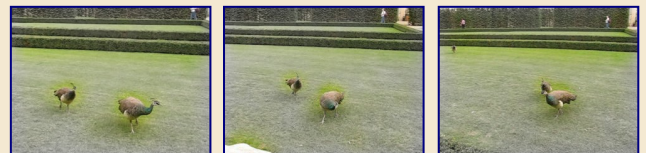Augment the stylisation using salience cues.

PRELIMINARY RESULTS

Salience-based blur

Salience-based de-saturation

RELATED WORK

There is an abundance of image-based stylisation techniques broadly covering abstraction, painterly rendering and line drawings.

Video-based stylisation techniques are scarcer and often require custom tweaks to ensure temporal coherence.

FUTURE WORK

My intention is to apply salience maps to direct stylisations in a localised manner. Salient image regions will be made to stand out over visually un-important background regions.

I will investigate appropriate temporal coherence metrics to evaluate my novel video stylisations.

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