EmotionMap：基于隐喻地图的视频情绪可视分析
EmotionMap: Visual Analysis of Video Emotional Content on a Map

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Abstract

Emotion plays a crucial role in gratifying users' needs during their experience of movies and TV series, and may be underutilized as a framework for exploring video content and analysis. In this paper, we present EmotionMap, a novel way of presenting emotion for everyday users in 2D geography, fusing spatio-temporal information with emotional data. The interface is composed of novel visualization elements interconnected to facilitate video content exploration, understanding, and searching. EmotionMap allows understanding of the overall emotion at a glance while also giving a rapid understanding of the details. The novelty and effectiveness of EmotionMap have been demonstrated by the user study and experts' feedback.

Contributions

Emotional content extraction and modeling. We collect the subjective and objective emotion data of several movies. Then we model the emotional content of these movies based on emotion representation models.

Using the metaphor of a map for video content analysis. We create a novel form for video analysis by means of a map. It provides an efficient way for exploring video content, especially emotion.

Interactive system with multi-views and natural sketches. We integrate natural sketch interaction in our system and construct an interactive visual analysis system with four embedded views.

Design Goals

G1: Let users understand the relation between events, scenes and roles and the corresponding audience and character emotions.
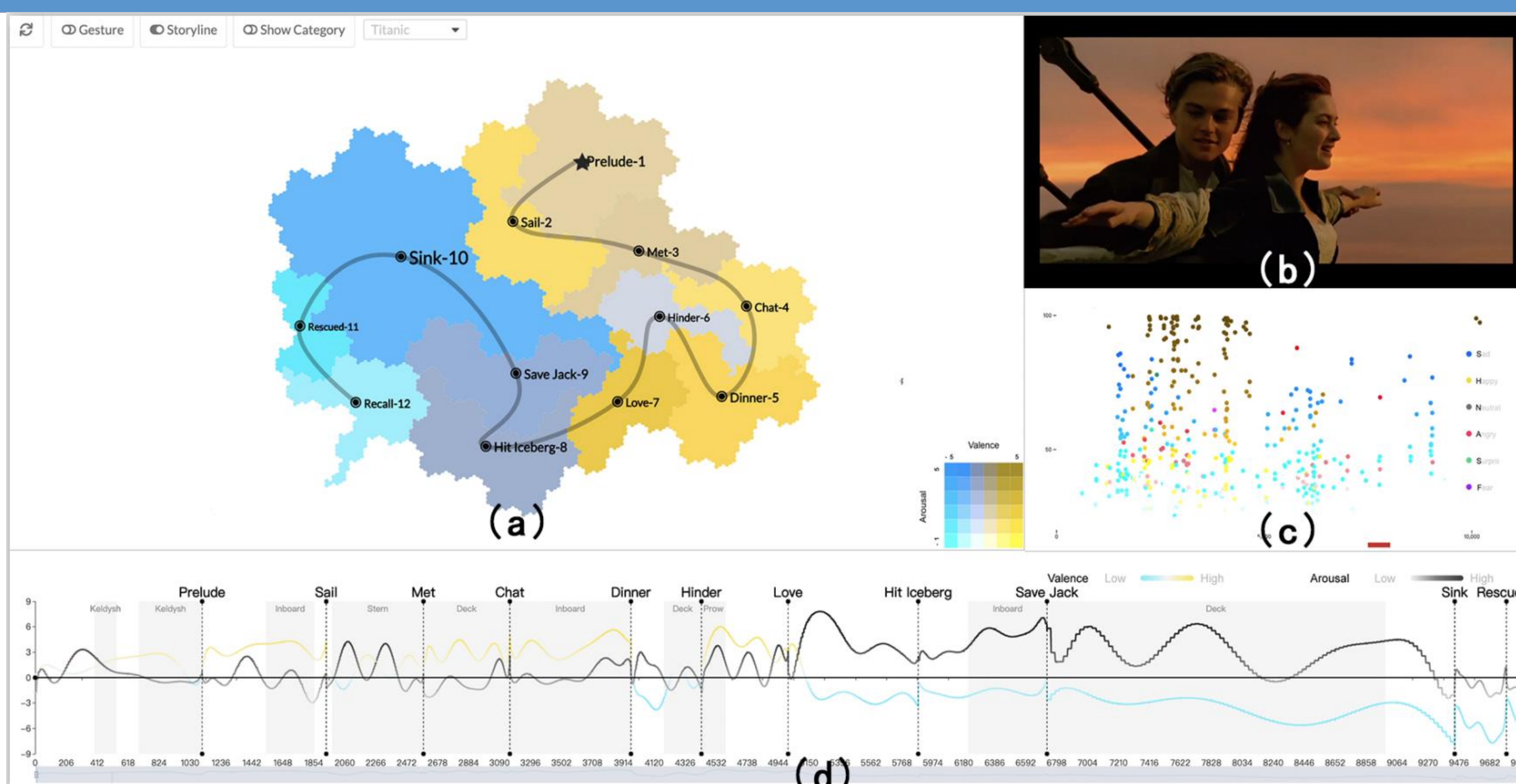
G2: Show the proportion and magnitude of emotions.

G3: Present the emotional change in time. The change of emotions often corresponds to the development of the movie plot.

G4: Help users retrieve movie content with emotional information (data), and play it rapidly.

G5: Allow users to compare the overall emotional content of different films.

Interface

Overview of EmotionMap with four embedded views:

(a) **Map view**, the main view that visualizes movie content using a map as a metaphor.
(b) **Video view**, for video playback.
(c) **Character view**, showing the emotion of selected characters.
(d) **Timeline view,** showing the emotional data in linear time.

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