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Automated generation of video game commentary

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ABSTRACT

This disclosure describes techniques to automatically generate commentary for video games, e.g., e-sports, tournament video gaming events, etc.

KEYWORDS

- Automatic commentary generation
- Game commentary
- Sports announcer
- Machine learning
- E-sports

BACKGROUND

Live e-sport or video gaming events often have human commentators who provide real-time commentary. Smaller events, e.g., games between friends, cannot afford their own live or professional commentators. Also, live commentary is usually limited to one or two languages.

DESCRIPTION

This disclosure describes techniques that automatically generate real-time commentary for games, e.g., e-sports, tournament events, video game tournament broadcasts, etc. The commentary is generated by use of a machine learning model. The model is using available commentary data, e.g., using prior commentary from popular game commentators.
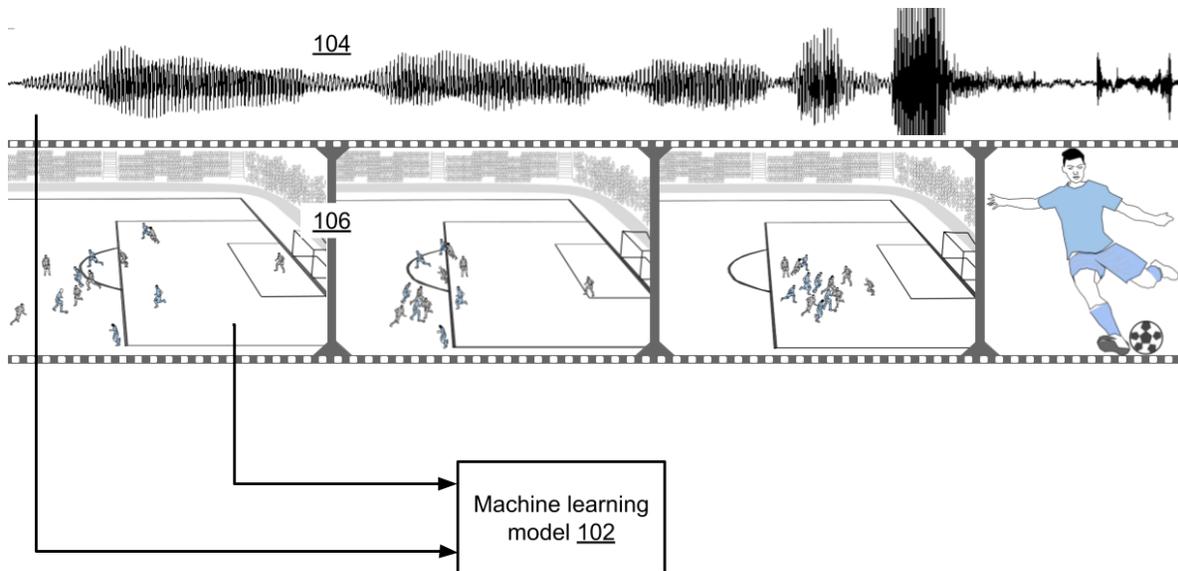
Fig. 1: Training a machine learning model to auto-generate live commentary

Fig. 1 illustrates training of a machine learning model to auto-generate live commentary, per techniques of this disclosure. Consecutive frames of a video game (106), along with audio commentary (104), are provided as training inputs to a machine learning model (102). The audio commentary within the training data can include commentary by popular gaming commentators. It can also be in popular voices, e.g., voices of professional actors, game characters, etc.

The machine learning model can include, e.g., regression learning models, generative learning models, neural networks, etc. Example types of neural networks that can be used include neural networks, long short-term memory (LSTM) neural networks, recurrent neural networks, convolutional neural networks, etc. Other machine learning models, e.g., support vector machines, random forests, boosted decision trees, etc. can also be used.

In operation, the language, voice, persona, and other characteristics of the computer-generated commentary can be customized by the user. The rendered commentary can emulate voices of famous people or popular game characters. Multiple voices can be generated to simulate multiple commentators that interact with each other. The commentary can be

augmented with sound effects and audio clips of interviews with real players. The commentary is kept in sync with any camera changes in the game renderings. The commentary is triggered by the act of the user that is watching the live feed of the game. The commentary can be augmented by data provided by the game developers or gaming engine.

Alternatively, a recording of a live event can be processed offline, commentary added, and a recording published that includes the new commentary.

The techniques of this disclosure democratize a feature, tournament commentary, that is currently available only for professional events. The techniques open up opportunities to create new kinds of voices for game events and also open up the concomitant opportunities for the sale of such voices. The techniques scale more easily and are less expensive than hiring professional human commentators. The voices of popular commentators can simultaneously be used in multiple events. Users, rather than event organizers, can pick their favorite commentators and languages. The commentary can simultaneously be rendered in multiple languages. Voice, speech patterns, and other stylistic attributes of human commentators are used for training upon specific permission from such commentators for the purpose of training a machine learning model. Generated commentary can be utilized with permission of the commentators and others who provided data for training of the model. The model can be trained to generate commentary using a known voice and/or style or to generate commentary that is a synthesized voice with a computer-generated style.

CONCLUSION

This disclosure describes techniques to automatically generate commentary for video games, e.g., e-sports, tournament video gaming events, etc.