Summarizing E-Sports Matches and Tournaments

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Game Streaming & E-Sports

- In 2013, **32 million viewers** watched the grand finals broadcast of the 2013 LoL World Championship
- In 2018, approximately **173 million viewers** accessed e-sports streams frequently.
- In 2018, Tyler “Ninja” Blevins, was the first person to reach **ten million subscribers** with a single game streaming channel
● First person shooter and an E-sports game
  ○ started in 2000
  ○ terrorists vs. counter terrorists
  ○ placing or defusing bombs, rescuing hostages, etc.

● Very specific and strict rules
  ○ matches consists of several rounds
  ○ players do only respawn in between rounds
  ○ economy management and team play are key
GameStory Task @ MediaEval

- Multimedia research tries to do research in relevant areas
  - we deem game streaming as extremely relevant
- Game streaming & YouTube already reach more people than traditional TV
- GameStory is the first approach of the MM research community to provide an evaluation challenge in this area
Data on the matches

● Two teams with five players each
  ○ results in 10 video streams

● Map stream
  ○ one overview of the map and the positions of the players

● Commentator
  ○ only if there is one, like in ESL
  ○ cut live like a sports event
  ○ includes audience, players and game footage
12-fold View of flusha’s Streak
Challenges

● Commentator stream is great, but goes for the whole event
  ○ and what if there is none?
● The event lasts more than an hour
  ○ many people just want the summary
  ○ cp. summary of soccer events in the evening news
Expected Outcome of GameStory

One single video / presentations significantly shorter than the match with the following characteristics

It should ...

- ... summarize the game
- ... be entertaining
- ... provide the flow and peak of a good story
- ... provide an innovative way to present a summary of a CS:GO match
Round: 19
Fnatic wins
FaZe Clan vs. Fnatic
10-9

Fnatic:
3300 $ spent
karrigan kills 3

Fnatic:
19250 $ spent
GuardiaN kills 3

FaZe Clan:
6500 $ spent

Fnatic:
21100 $ spent
KRIMZ kills 3

FaZe Clan:
20150 $ spent

Round: 20
Fnatic wins
FaZe Clan vs. Fnatic
10-10

Fnatic:
3450 $ spent

Fnatic:
950 $ spent

Fnatic:
17200 $ spent
Golden kills 3
Triple Kill by 'Lekr0' at Round 15

Event Stream

'Lekr0'
Particular Challenges

- **Video streams are not synchronized**
  - it’s hard to find the same time point in all of the 12 streams
  - offset from metadata to actual video up to +/- 40 secs & constantly changing

- **Selection of important and entertaining events**
  - is it killstreaks, round ends, draws, ... ?
Particular Challenges

- Presenting the development of the game
  - how can the development over time be displayed?
Particular Challenges

- How to select audio?
  - using the commentator is an easy solution

- How to present all this in a pleasant way?
  - statistics, in-game footage, audience, players, emotions, ...
MultimediaEval 2018 - GameStory

- Five submissions: a first approach to the problem
- Teams focused on specific questions needed, like ...
  - finding killstreaks
  - synchronizing video streams
  - finding the position of players in the map
  - visualizing game progress & economy
  - etc.
Review scores per run, averaged. 1 is strongly agree, 5 is strongly disagree

- The submission gives a summary of the match at hand.
- The submission is entertaining.
- The submission provides the flow and peak of a good story.
- The submission provided an innovative way to present a summary of an CS:GO match.
- A summary like this submission can be applied to games different from CS:GO.
Outlook

- We are not there yet
  - even with ‘AI’ or deep learning
- Videos of games are cheap
  - high school soccer matches are not recorded, but e-sports matches are
- CS:GO is just one game out of many
  - each of them has different (complex) rules & semantics
GameStory Task @ MediaEval 2019

- Replay detection in the very same data
- Ground truth is currently created
- Registration is open!