

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

Original Interface from ZNIPE-tv



IEM Katowice

Event stream



Fnatic 0 **1:34** **1** **FaZe Clan**

Round 2/30
Grand Final - Best of 5

GuardiaN | **flusha**

Golden | **rain**

ESL ONE COLOGNE
6TH - 8TH JULY 2018
GET YOUR TICKETS NOW!
ESLGAMING.COM/TICKETS

100	1	KRIMZ	\$150
100	2	JW	\$50
75	3	Golden	\$150
100	4	Husha	\$100
100	5	Lekr0	\$200

100	olofmeister	\$50
100	karrigan	\$300
100	GuardiaN	\$50
100	rain	\$100
100	NiKo	\$450



GuardiaN



olofmeister



NiKo



karrigan



rain



Map overview



GOLDEN



Lekr0



JW



flusha



krimz

08:47

Welcome to the Chat room!

17:51 soapstar:

:D

21:41 vess:

test

13:41 Ole:

NIKO :D

17:14 darthmalishi:

gg

FOCUSED VERSUS STRATEGIC FOMO

FaZe Clan **VS** Fnatic

Share Sync broadcast with others

SEND

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 flushha's Streak

flusha's View





Commentator's View

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

Example Submission 1



3300 \$ spent
karrigan kills 3

Fnatic:
3450 \$ spent

19250 \$ spent
GuardiaN kills 3

Fnatic:
950 \$ spent

Round: 19

Fnatic wins

FaZe Clan vs. Fnatic

10-9

FaZe Clan:
6500 \$ spent

Fnatic:
21100 \$ spent
KRIMZ kills 3

Round: 20

Fnatic wins

FaZe Clan vs. Fnatic

10-10

FaZe Clan:
20150 \$ spent

Fnatic:
17200 \$ spent
Golden kills 3

Triple Kill by 'Lekr0' at Round 15



Event Stream



'Lekr0'

Example Submission 2

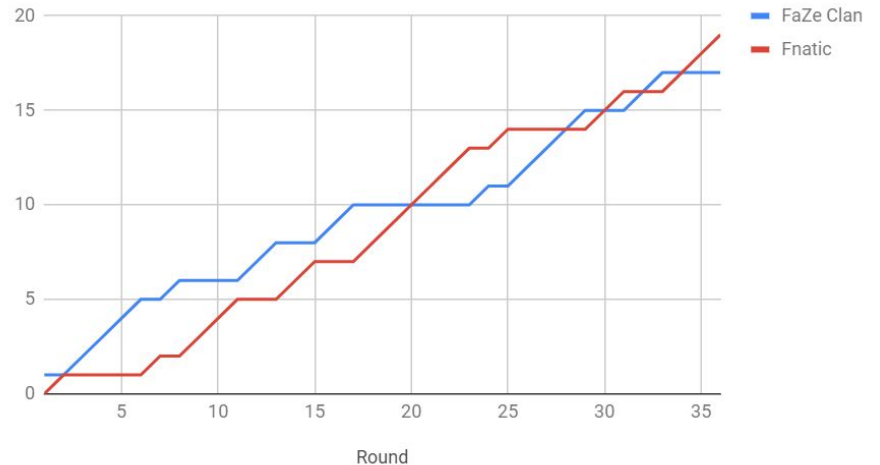
Particular Challenges

- 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?

FaZe Clan vs. Fnatic



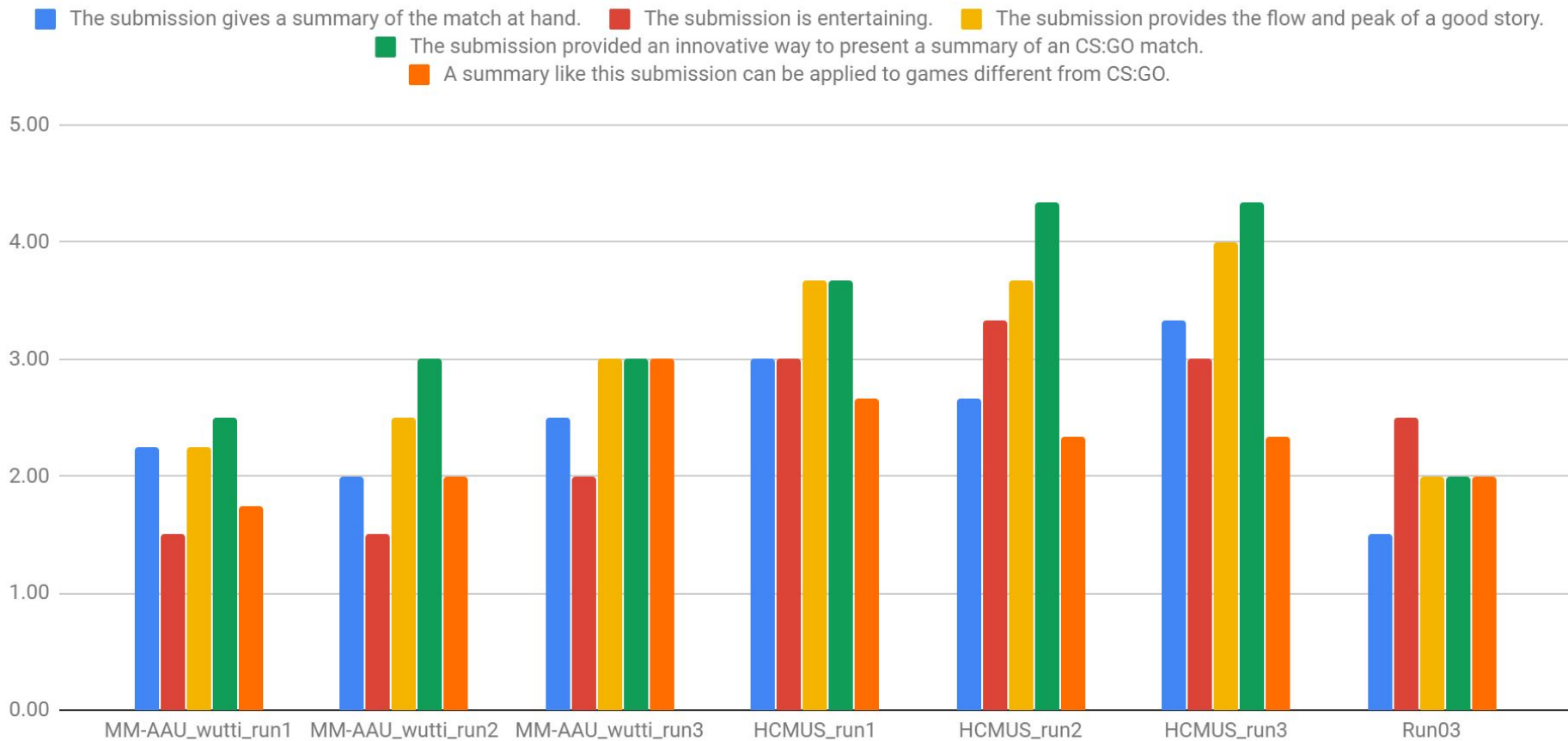
Particular Challenges

- 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



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!



ediaEval Benchmark