

CYBERPUNK

2077



Text Analytics - Cyberpunk 2077

Gliederung

- ▶ Historie vom Spiel
- ▶ Vertrag
- ▶ Crawling und Scraping der Daten
- ▶ Textaufbereitung
- ▶ Explorative Datenanalyse
- ▶ Sentiment und Topic Analyse
- ▶ Zusammenfassung
- ▶ Handlungsempfehlung

Cyberpunk vor Release

Cyberpunk 2077 claims this year's Golden Joystick for Most Wanted Game

Cyberpunk 2077, the studio's long-awaited action role-player, was the **big winner** at the 2020 European games fair, winning the overall Best of Gamescom Award as well as prizes for best PlayStation game, best PC game, best roleplaying titles and the Most Wanted consumer prize voted on by regular gamers.

Cyberpunk während Release

10/10

GameSpew

5/5

VGC

5/5

TheGamer

10/10

God Is A Geek

10/10

Gameblog.fr

5/5

GamesRadar+

5/5

VG247

10/10

IGN Japan

9.5/10

SpazioGames

9.3/10

Vandal

9.1/10

GameStar

9.0/10

Power Unlimited

9.5/10

The Games
Machine

9.0/10

Game Informer

9.0/10

GameWatcher

9.0/10

RPG Site

9.5/10

Stevivor

9.0/10

IGN

9.0/10

Eurogamer Italy

9.0/10

Everyeye.it

9.5/10

Areajugones

9.0/10

PCGamesN

9.0/10

GameMag

9.0/10

3DJuegos



Cyberpunk nach Release

Gamestar:

Cyberpunk 2077: Bug kann eure Saves zerstören, so beugt ihr vor

Cyberpunk 2077 wird von zahlreichen Problemen geplagt. Unter anderem könnt ihr euren Spielstand verlieren. Wir erklären, wie ihr das verhindert.

Cyberpunk 2077: Warum die verkorkste PS4- und Xbox-Version auch PC-Spielern schadet

Cyberpunk 2077 ist auf Last-Gen-Konsolen ein technisches Fiasko. Heiko erklärt, weshalb darunter auch die Besitzer der deutlich besseren PC-Version leiden werden.

Warum wir Cyberpunk 2077 den Platin-Award aberkennen müssen

Eigentlich ist Cyberpunk 2077 ein Meisterwerk. Doch nach dem Day-One-Patch entdecken wir Bug-Probleme, die uns zum Abwerten zwingen.

Cyberpunk 2077: CD Projekt wird wegen "Irreführung" verklagt

CD Projekt bekommt rechtliche Probleme wegen des Konsolen-Launchs: In den USA wurde eine Klage wegen falscher Aussagen eingereicht. Das wollen die Entwickler nicht kampflos hinnehmen.

Report zu Cyberpunk 2077: Alles zu den Vorwürfen und der Reaktion des Studio-Chefs

Jason Schreier kritisiert auf Basis von Quellen die Entwicklung von Cyberpunk 2077 scharf. Der Chef von CD Projekt Red weist die Vorwürfe teils zurück.

Cyberpunk 2077: Offizielle Entschuldigung für Bugs und erste Infos zu Patch 1.05

CD Projekt entschuldigt sich für den Zustand von Cyberpunk 2077 auf PS4 und Xbox One und stellt eine Roadmap mit Patches vor, auch für den PC.

IGN:

Cyberpunk 2077 Developers Reportedly Confront CDPR Leadership Over Crunch and Launch Issues

CDPR devs ask some tough questions that deserve answers.

The Messy Messaging Behind Cyberpunk 2077's Messy Launch

Cyberpunk 2077 wasn't ready, so it isn't done.

CD Projekt Red Stock Drops 29% Around Cyberpunk 2077 Launch

Vertrag

- ▶ Wie wurde das Spiel vor, während und nach dem Release des Spiels von den Spielern aufgenommen?
- ▶ Spiegeln sich die negativen Schlagzeilen diverser Magazine in der Meinung der Spieler wider?
- ▶ Falls dies der Fall ist: Analyse, wo die Probleme liegen, damit der Auftraggeber passende Lösungen finden kann.

Crawling und Scraping der Daten

- ▶ Analyse auf Reddit Kommentare
- ▶ Crawling/Scraping: Pushshift Api und Reddit API (PRAW)
- ▶ Top 10 Subreddit Beiträge innerhalb einer Woche im Zeitraum von 10-09-2020 bis 10-03-2021, also drei Monate vor und nach Release
- ▶ Keine Beiträge über 18, Spoiler enthalten oder im Contest Mode sind
=> **260 Beiträge**
- ▶ Alle Kommentare zu jedem Beitrag
=> **441k Kommentare**

	id	author	body	created_utc	score	parent_id	full_link	submission_id
315639	geysyyp	CoopaTroopaX	You can put well over 150 in the game TBH. Gam...	2020-12-07	6	t1_geyrnwd	https://www.reddit.com/r/cyberpunkgame/comment...	k8kksn
256736	gfbtfk5	None	but 1060 is recommended for this game. If they...	2020-12-10	1	t1_gfbn4rf	https://www.reddit.com/r/cyberpunkgame/comment...	kafz4m
9485	goie8v0	Dantegram	I never actually felt immersed. Any "pointless...	2021-02-23	105	t1_goiaaog	https://www.reddit.com/r/cyberpunkgame/comment...	lqmtrb
286922	gf20i9s	Peeka789	Am ambitious, original buggy disaster. It's no...	2020-12-08	1	t1_gf1vkki	https://www.reddit.com/r/cyberpunkgame/comment...	k8kjro
142247	gg8v4ri	ShittyUsernameX	He hasn't been in a massive hit since 2003. I ...	2020-12-18	1	t1_gg8utvv	https://www.reddit.com/r/cyberpunkgame/comment...	kfba3u

Textaufbereitung

	id	author	body	created_utc	score	parent_id
324350	gheh4ru	ravisandesu	I still dont quite understand how the skill tree capstones work in this game. If I put one point in do i get the full effect or do i only get 1% towards it?\n\nne.g. Pistol capstone says 30%. Do i need to put 30 points into it to get the 30%? Or do I put one in, get 30% and then every other point gives me 31%, 32% etc.	2020-12-29	1	t3_k3obxq
417217	g8k5cbh	thisisaNORMALname	[Uh, yes it is.] (https://myanimelist.net/anime/467/Koukaku_Kidoutai__Stand_Alone_Complex)	2020-10-12	0	t1_g8jc1q1
22642	gm1uzib	idbethrilled	"the retailer bought to many copies for a dead console"	2021-02-05	1	t1_gm1uwp2
281449	gg3s8tw	elvis-tran	You need a specific technical perk in order to craft higher tier items such as Rare -> Epic -> Legendary	2020-12-17	1	t1_gg3bfdm

Textaufbereitung

```
def clean(text):  
    # markdown URLs like [Some text](https://....)  
    text = re.sub(r'\[[^\[\]]*\]\([^\(\)]*\)', r'\1', text)  
    # text or code in brackets like [0]  
    text = re.sub(r'\[[^\[\]]*\]', ' ', text)  
    # sequences of white spaces  
    text = re.sub(r'\s+', ' ', text)  
    # remove * character  
    text = re.sub(r'\*', '', text)  
    # remove . or ... characters  
    text = re.sub(r'\.+', '', text)  
    # remove links like (https:...) or https:....  
    text = re.sub(r'\>(*https:[^\(\)\n ]*\)*', '', text)  
    return text.strip()
```

Textaufbereitung

	body	clean_body
195339	A video showcasing the full weapons wall: [https://youtu.be/VJ3FhTzjvnY] (https://youtu.be/VJ3FhTzjvnY)	A video showcasing the full weapons wall:
398226	9th here too, rather than take a PTO day off for my birthday, I delayed it to the 19th and 20th. Cyberpunk was the gift to myself, now I have to change my PTO days and wait over a month to celebrate. I'm one that never makes a big deal about my birthday and rarely do anything to celebrate it, but the one time that I do...😞	9th here too, rather than take a PTO day off for my birthday, I delayed it to the 19th and 20th Cyberpunk was the gift to myself, now I have to change my PTO days and wait over a month to celebrate I'm one that never makes a big deal about my birthday and rarely do anything to celebrate it, but the one time that I do😞
374416	I wouldn't use that abbreviation btw	I wouldn't use that abbreviation btw
30175	To be fair, it wasn't just Jonny on his own, it was a specialist team backed by miltech, whilst embarrassing for Arasaka, they are still the most powerful corp 50 years later. Plus, I'm not sure you can say "humanity" wins a battle against corps, when 750,000 people die in an attack against a Corp backed by another Corp.\n\nI concede that losing the AI and other work toward projects on the facility would've been a blow, but again seeing as Mikoshi is up and running again it wasn't that costly seeing how powerful Arasaka are 50 years later. I really dont see the value in trading so many innocent lives for seemingly little gains.	To be fair, it wasn't just Jonny on his own, it was a specialist team backed by miltech, whilst embarrassing for Arasaka, they are still the most powerful corp 50 years later Plus, I'm not sure you can say "humanity" wins a battle against corps, when 750,000 people die in an attack against a Corp backed by another Corp I concede that losing the AI and other work toward projects on the facility would've been a blow, but again seeing as Mikoshi is up and running again it wasn't that costly seeing how powerful Arasaka are 50 years later I really dont see the value in trading so many innocent lives for seemingly little gains
189604	Not sure as I paid with it but didn't worry about credits to much you'll have 10x that after a few missions if you're selling junk and doing sidemissions	Not sure as I paid with it but didn't worry about credits to much you'll have 10x that after a few missions if you're selling junk and doing sidemissions

Textaufbereitung

```
def extract_nlp(doc):  
    return {  
        'lemmas'      : extract_lemmas(doc, exclude_pos = ['PART', 'PUNCT', 'DET', 'PRON', 'SYM', 'SPACE'], filter_stops = False),  
        'adjs_verbs'  : extract_lemmas(doc, include_pos = ['ADJ', 'VERB']),  
        'nouns'       : extract_lemmas(doc, include_pos = ['NOUN', 'PROPN']),  
    }
```

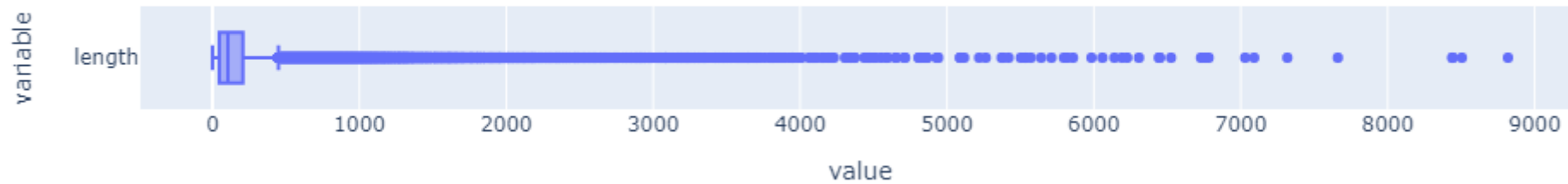
Textaufbereitung

Ergebnis des NLP mit spaCy

	lemmas	adjs_verbs	nouns
0	post have receive multiple report and have be temporarily remove until moderator can review be bot and action be perform automatically please contact moderator of subreddit if have question or concern	receive multiple remove review perform contact	post report moderator bot action moderator subreddit question concern
1	ahhhh plan bet will go great	bet great	plan
2	just fire up rdr2 again few day ago and have same thought great game	fire great	rdr2 day thought game
3	remember when CD Projekt Red say that cyberpunk 2077 would be as polished as Red Dead redemption 2 sadly know be true statement	remember say polished know true	CD Projekt Red cyberpunk Red Dead redemption statement
4	just way npc mindlessly exist in cyberpunk completely ruin for and ' idea be make NPC outfit 100 lime green neon jumpsuit outfit stand out like crazy when ' 17 people and 11 of be wear same exact outfit whole side quest system be horribly implement in cyberpunkI enjoy gunplay and static world look coolbut god ca get into game for life of	exist ruin green stand crazy wear exact implement enjoy static look	way npc cyberpunk idea NPC outfit lime neon jumpsuit outfit people outfit quest system cyberpunkI gunplay world game life
5	really sum up for could really put finger on why do enjoy cyberpunk be bug love Bethesda game just as buggy ' because just be immersive feel empty and superficial and fake	sum enjoy love immersive feel superficial fake	finger cyberpunk bug Bethesda game buggy
6	cyberpunk be Fyre Festival of video game		cyberpunk Fyre Festival video game
7	be insane detail put into red dead be incredible cyberpunk look one way then look back and be go	insane red dead incredible look look go	detail cyberpunk way
8	put maybe 8 hour into cyberpunk before get too frustrated with control and bug continue for now also jump to play RDR2 for first time instead and be like night and day so polished and even be able interact only superficially with stranger make huge difference compare to dumb AI in CP be like go back to GTA3 or Vice City or be bad be just expect or be promise from hype up next gen game be look forward to come back to CP in year or more when hopefully be little easy approach with patch or when will be more mod help with shortcoming	get frustrated continue jump play polished able interact make huge compare dumb go bad expect promise hype look come little easy approach help	hour cyberpunk control bug RDR2 time night day stranger difference AI CP GTA3 Vice City gen game CP year patch mod shortcoming
9	play cyberpunk for few day after release and have play since Most disappointing game 've ever play	play play disappointing play	cyberpunk day release game

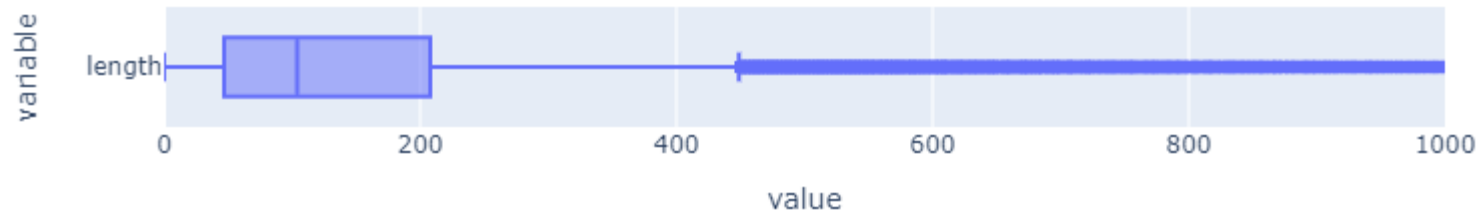
Explorative Datenanalyse

Analyse der Kommentarlängen



Explorative Datenanalyse

Analyse der Kommentarlängen



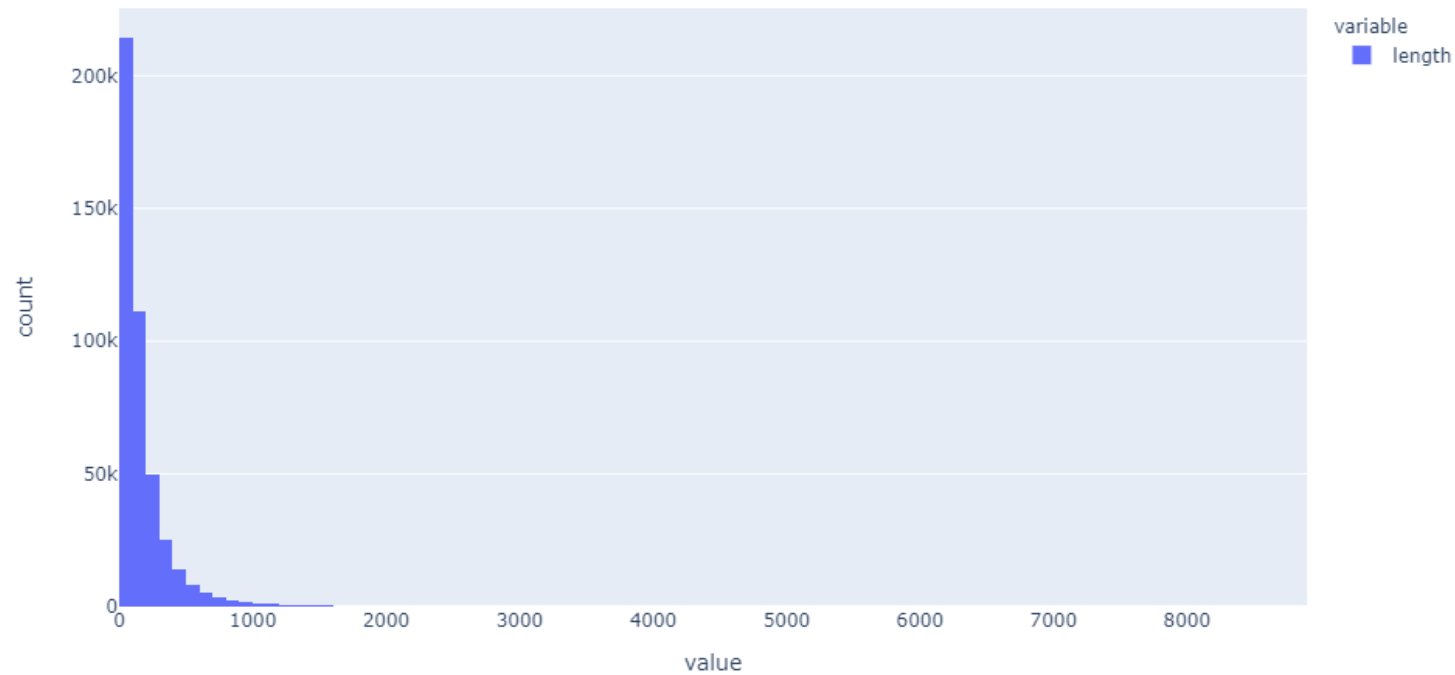
Explorative Datenanalyse

```
df[df["length"] > 6000].sample(5)
```

executed in 452ms, finished 10:49:18 2021-06-16

	id	author	body	clean_body	created_utc	score	parent_id	
249031	gfywpqd	Woody_Harryishson	> No game is perfect, and CDPR never claimed that Cyberpunk would be. . Lol like hell they didn't. . Worry not. When thinking CP2077, think nothing less than TW3 — huge single player, open world, story...	> No game is perfect, and CDPR never claimed that Cyberpunk would be Lol like hell they didn't . Worry not. When thinking CP2077, think nothing less than TW3 — huge single player, open world, story...	2020-12-15	2	t1_gfytgw1	https://www.reddit.com/r/cyberpunkgame/comments/kdpaji/the_
276151	gftf4lm	redditrando250	>You're disappointed about it not living up to your own created version in your head which there was no allusion to. . That's the entire point of an RPG video game. Based off a table top RPG. The...	>You're disappointed about it not living up to your own created version in your head which there was no allusion to. That's the entire point of an RPG video game. Based off a table top RPG They give...	2020-12-14	11	t1_gftb5h3	https://www.reddit.com/r/cyberpunkgame/comments/kcayva/proba
311581	gf1r81z	alphamachina	My opinions might not be popular one's, but... here it goes. I think that this will be a prime example of the type of game to wait quite a while to play. Despite the fact that I pre-ordered it back...	My opinions might not be popular one's, but here it goes I think that this will be a prime example of the type of game to wait quite a while to play. Despite the fact that I pre-ordered it back in ...	2020-12-08	1	t3_k8z6gz	https://www.reddit.com/r/cyberpunkgame/comm

Explorative Datenanalyse



Explorative Datenanalyse

Analyse der zeitlichen Entwicklung der Kommentare

```
df['day'] = df['created_utc'].dt.date  
df['week'] = df['created_utc'].dt.strftime("%Y/Week %W")  
  
df[['created_utc', 'day', 'week']].sample(5)
```

executed in 5.01s, finished 17:41:26 2021-06-16

	created_utc	day	week
202445	2020-12-11	2020-12-11	2020/Week 49
375393	2020-10-30	2020-10-30	2020/Week 43
230012	2020-12-12	2020-12-12	2020/Week 49
54132	2021-01-16	2021-01-16	2021/Week 02
337687	2021-04-27	2021-04-27	2021/Week 17

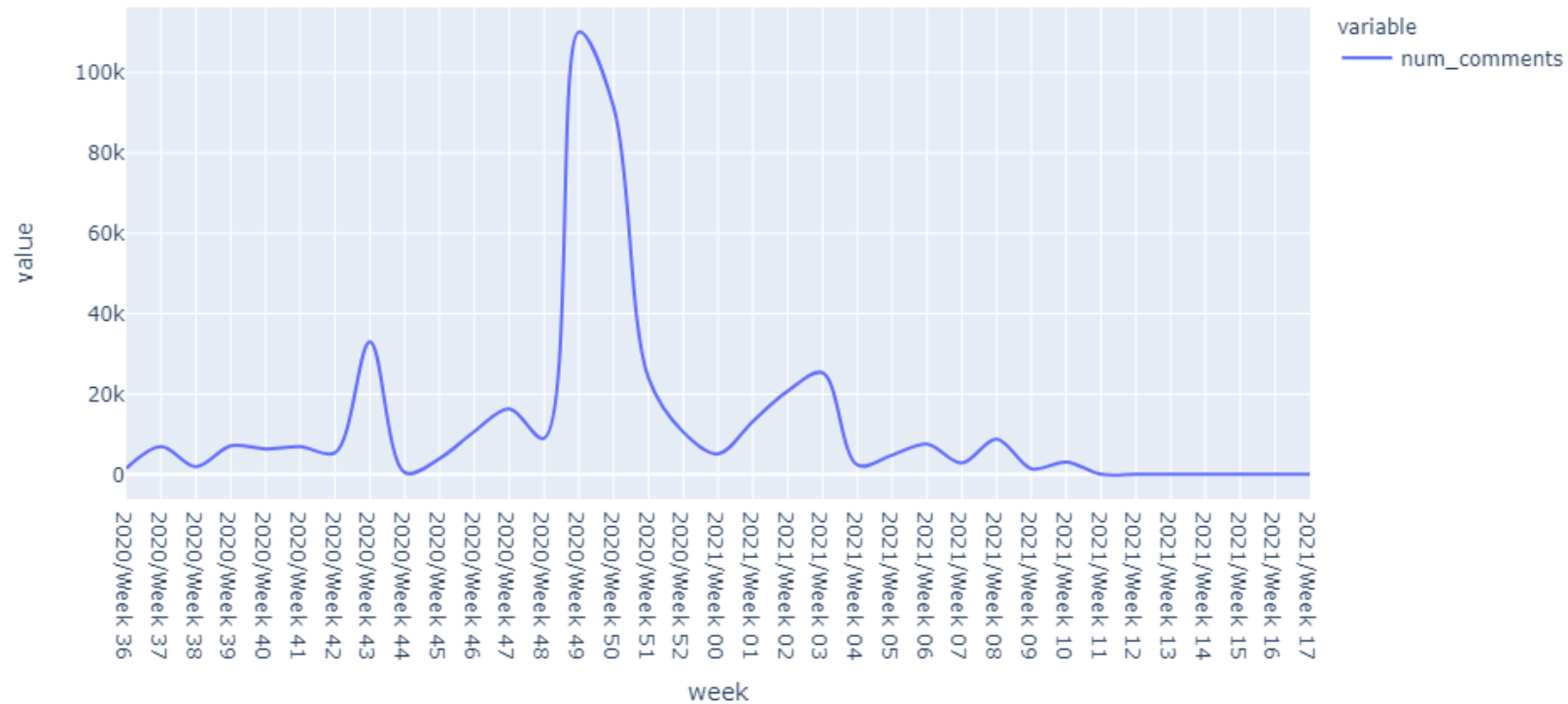
```
df[['day', 'week']].describe().T
```

executed in 1.38s, finished 11:23:50 2021-06-16

	count	unique	top	freq
day	441494	233	2020-12-18	40834
week	441494	35	2020/Week 49	110116

Explorative Datenanalyse

Anzahl der Kommentare pro Woche



Explorative Datenanalyse

Spike 2020/Week 43

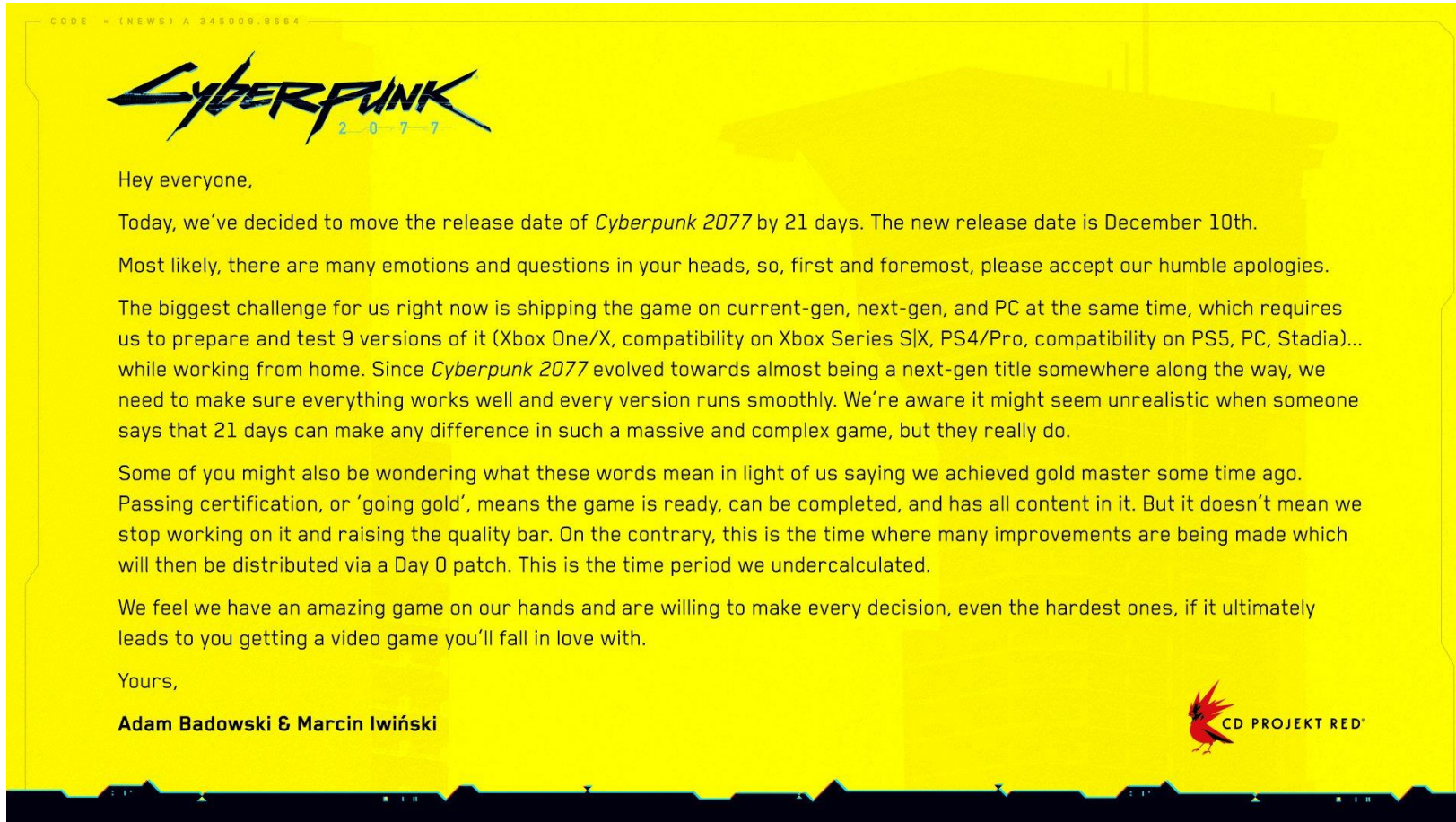
	parent_id
t3_jj4kdt	5861
t3_jj5xa4	760
t3_jkatdm	722
t3_jjb9se	519
t3_jj4ri7	443
...	...
t1_gadsan7	1
t1_gam1skg	1
t1_gabo6nb	1
t1_gaaxl4k	1
t1_gab2pd3	1

	id	author	title	selftext	created_utc	num_comments	locked	full_link
0	jj4kdt	fikri01	Cyberpunk 2077 on Twitter		2020-10-27	15577	0	https://www.reddit.com/r/cyberpunkgame/comments/jj4kdt/cyberpunk_2077_on_twitter/

Explorative Datenanalyse

id	author	body	clean_body	created_utc	score	parent_id
381525	gaaiel8	mbrzein Just don't feel like there's any reason to trust a Dec 10th date at this point. Won't be suprised to see another yellow wall of text in mid-November.	Just don't feel like there's any reason to trust a Dec 10th date at this point Won't be suprised to see another yellow wall of text in mid-November	2020-10-27	1	t3_jj4kdt https://www.reddit.com/r/cyberpunkgame/comments/jj4kdt/cyberpunk_2077_
384674	gacx4yw	Josephthecastle That game must be worth the wait though lol	That game must be worth the wait though lol	2020-10-28	0	t3_jj4kdt https://www.reddit.com/r/cyberpunkgame/comments/jj4kdt/cyberpunk_2077_
383840	gac07rq	yukonwanderer I can't afford a computer repair right now so I'm actually feeling pretty apathetic and even maybe a tad relieved	I can't afford a computer repair right now so I'm actually feeling pretty apathetic and even maybe a tad relieved	2020-10-28	1	t3_jj4kdt https://www.reddit.com/r/cyberpunkgame/comments/jj4kdt/cyberpunk_2077_

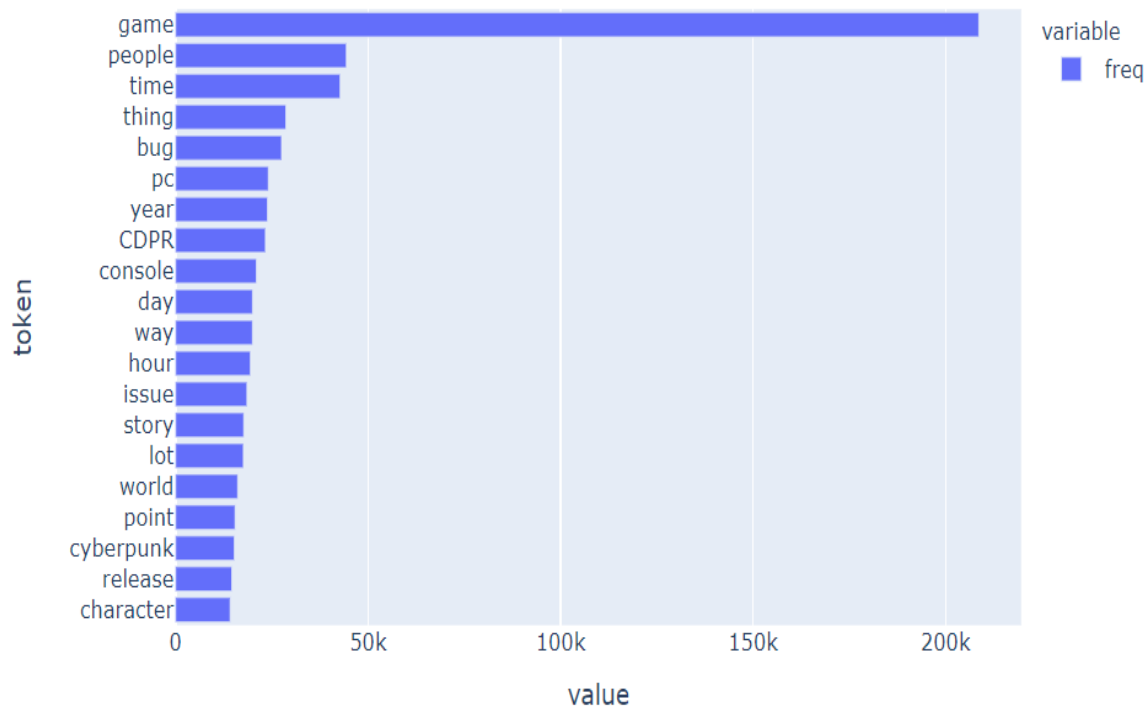
Explorative Datenanalyse



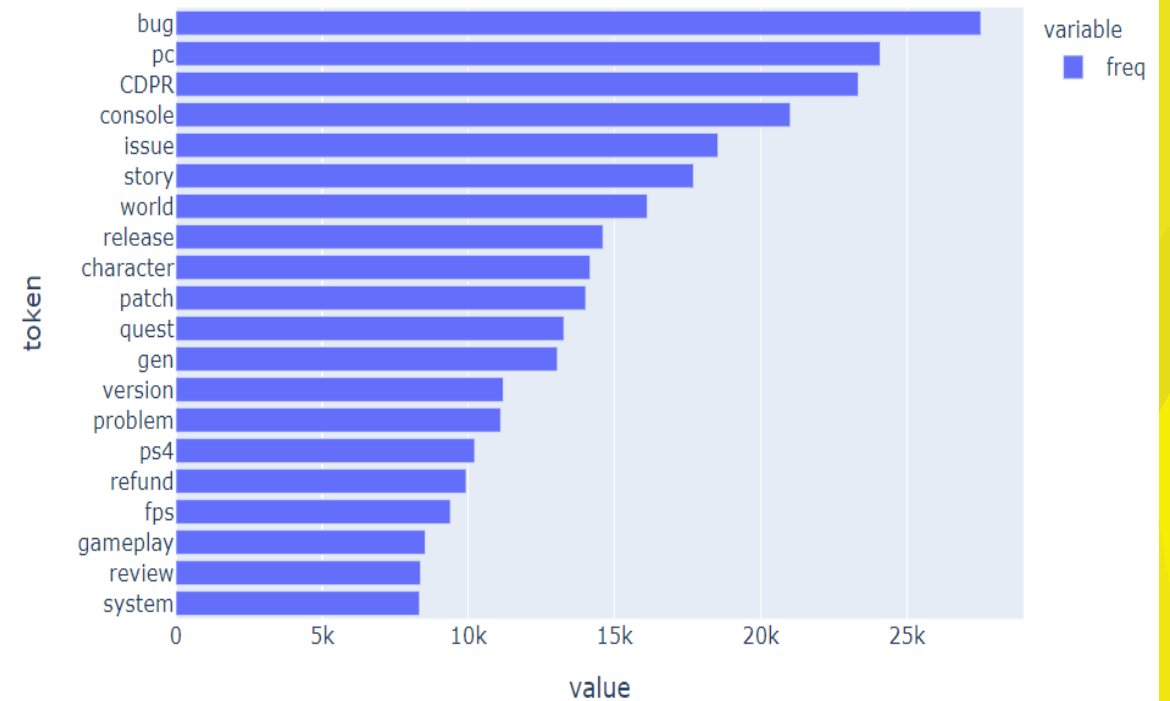
Explorative Datenanalyse

Analyse von Worthäufigkeiten

Ohne Stopwords:

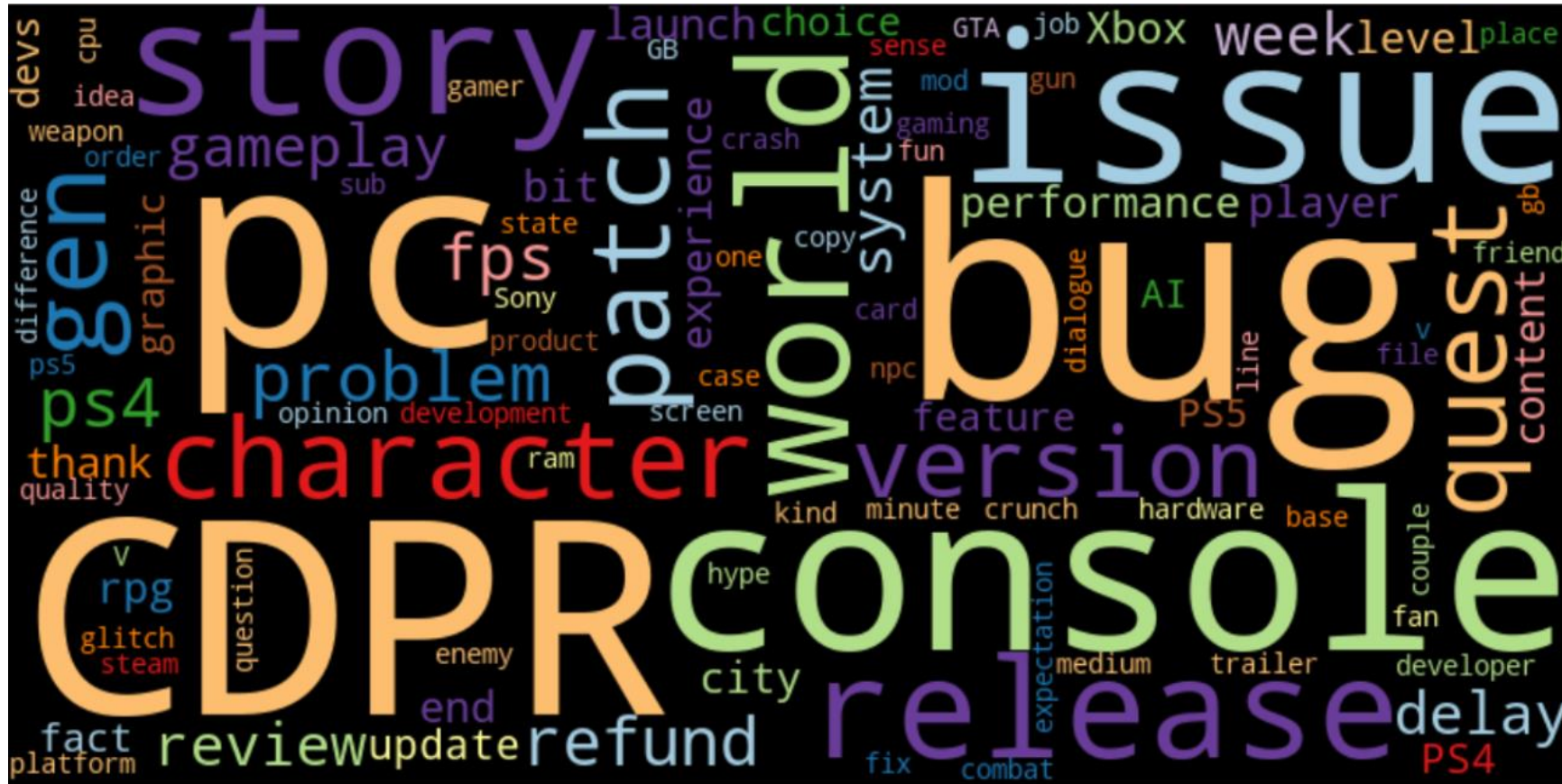


Mit Stopwords:



Explorative Datenanalyse

WordCloud gefiltert mit Stopwords



Explorative Datenanalyse

Mehrere WordClouds im Vergleich

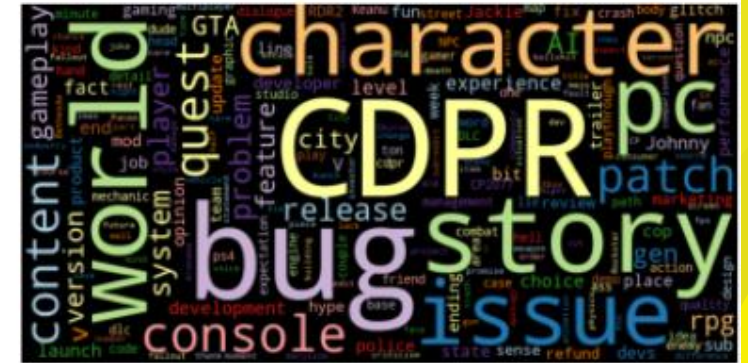
10/09/2020 - 10/11/2020



10/11/2020 - 10/01/2021

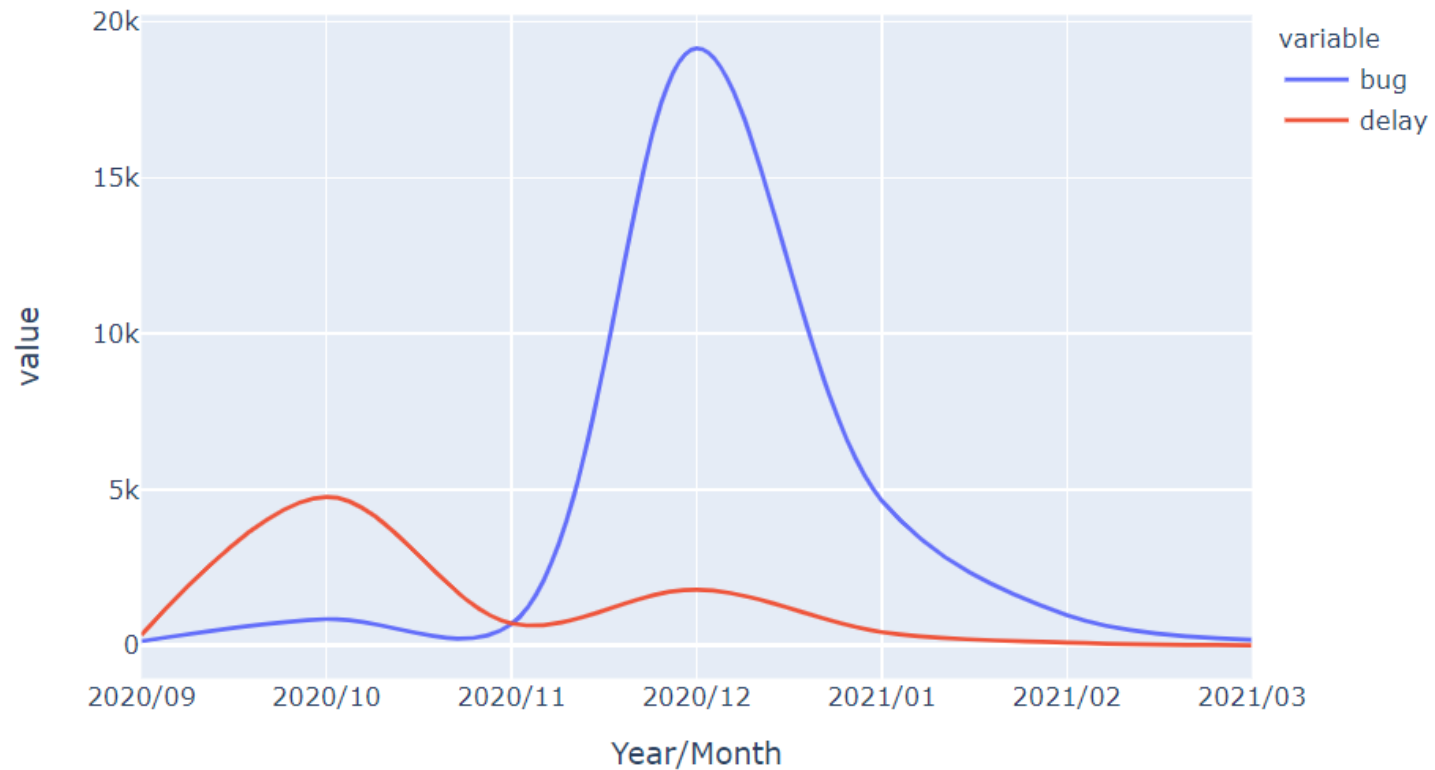


10/01/2021 - 10/03/2021



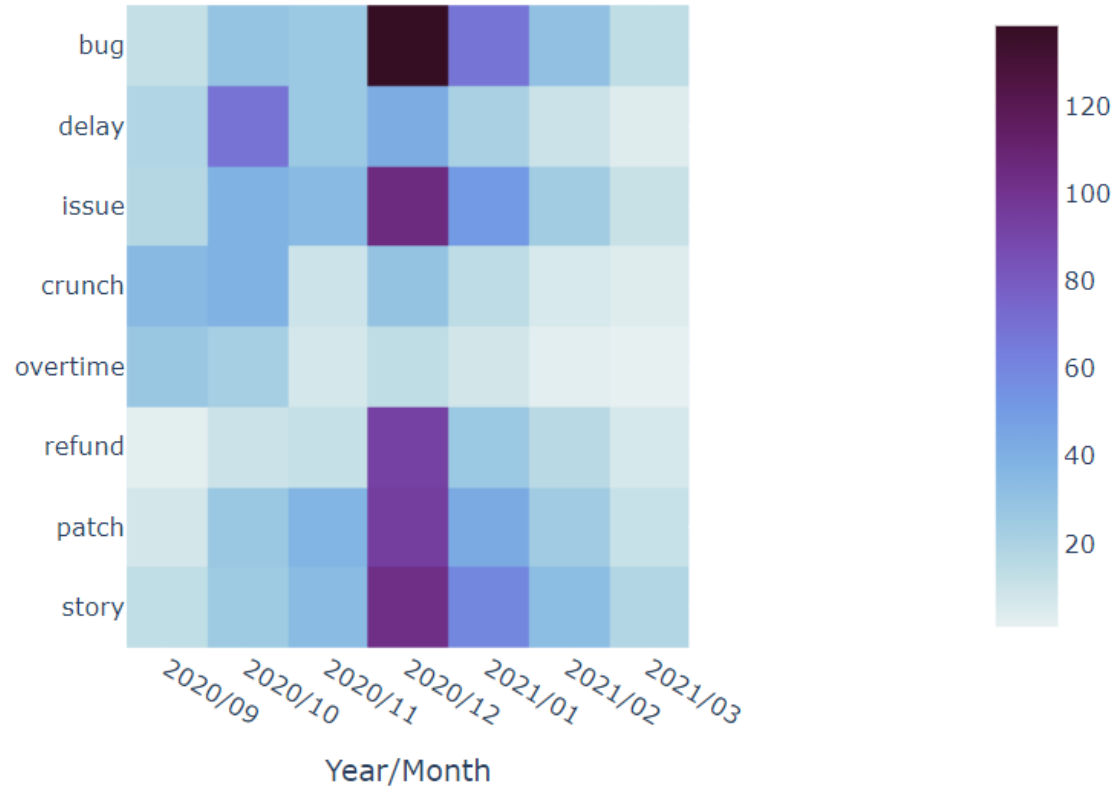
Explorative Datenanalyse

Worthäufigkeit pro Zeit



Explorative Datenanalyse

Heatmap



Sentiment und Topic Analyse

Sentiment Analyse mit Vader

```
text = df['body'].sample().iloc[0]  
vader_sentiment_analyzer_scores(text)
```

executed in 792ms, finished 21:15:41 2021-06-14

That's a feature, not a bug : {'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound': 0.0}

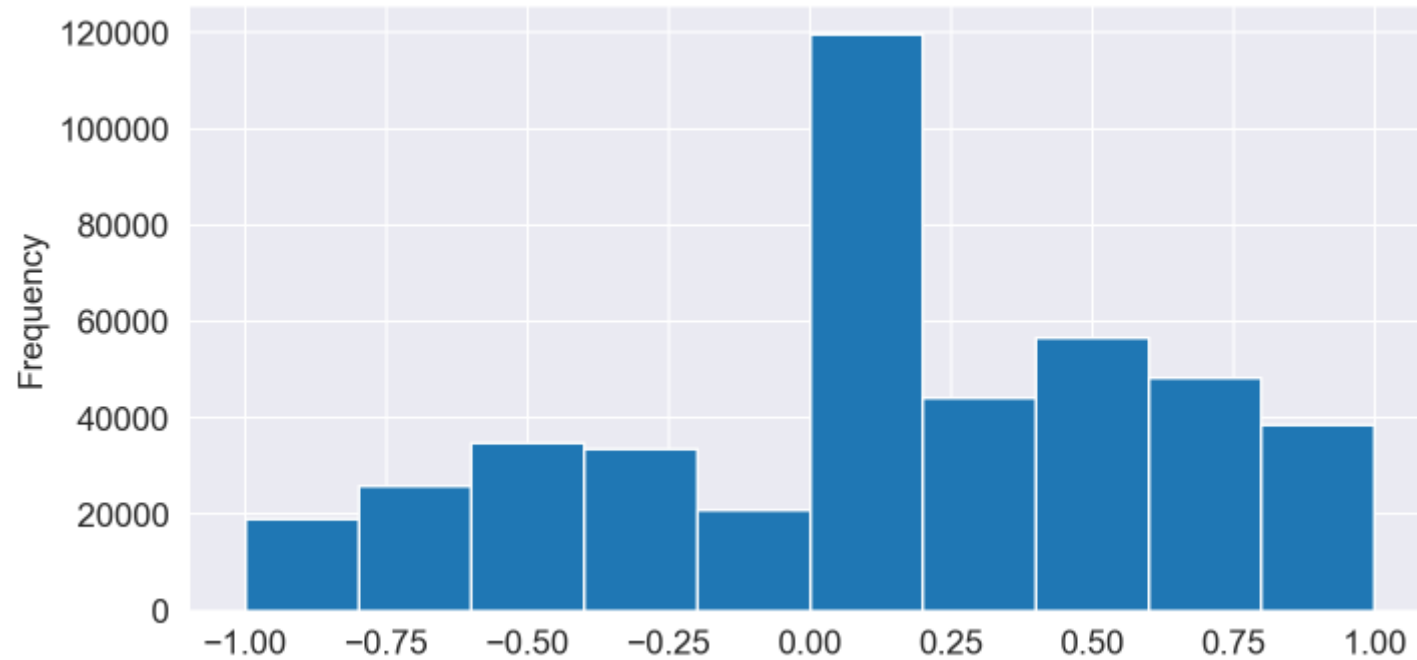
```
def map_senti(sentiment_score):  
    if sentiment_score >= 0.05:  
        return 'positive'  
    elif -0.05 < sentiment_score < 0.05:  
        return 'neutral'  
    else:  
        return 'negative'
```

Sentiment und Topic Analyse

Sentiment Analyse mit Vader

comment_id		body	sentiment_score	sentiment_value
231277	gf8whtq	PC player here. The optimizations are absolutely horrid. There's absolutely no reason why I should be getting terrible framerates on a 2080 Ti. This game needed another 12 months of development. "...	-0.93	negativ
383598	gabiwag	"trust us guys we only need to crunch for 3 weeks this time it'll be okay" lol bunch of fuckin losers over at cdpr, wasn't worth the preorder	0.45	positive
125174	gg8arpz	I have it on my ps5 and I'm really enjoying it it curashes every so often but loads back up real quick and easy. I honestly don't get the crazy hate it's getting. It's no bugier than any bethesda ...	0.85	positive

Sentiment und Topic Analyse



sentiment_value	
positive	206197
negativ	130661
neutral	104636

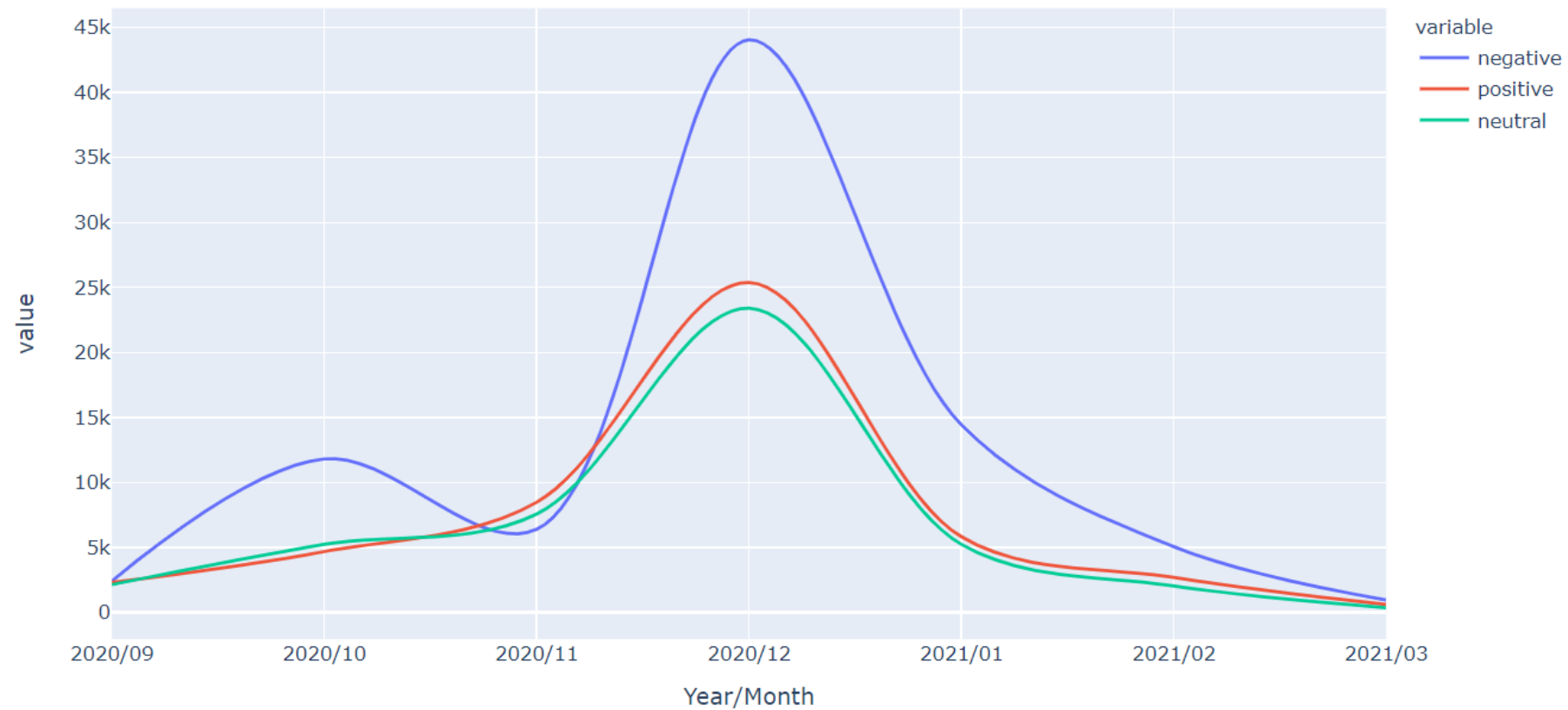
Sentiment und Topic Analyse

Roberta Definition:

- ▶ Basiert auf Bert
- ▶ Modifiziert Hyperparameter
- ▶ Trainiert mit 58 Mio. Tweets
- ▶ Feinjustiert auf Sentiment-Analyse mit TweetEval-Benchmark

Sentiment und Topic Analyse

Sentiment Plot von Roberta



Sentiment und Topic Analyse

Vader im Vergleich mit Roberta

comment_id	body_roberta	created_utc	sentiment_value_roberta	sentiment_score_roberta	body_vader	sentiment_score_vader	sentiment_value_vader
giylr8d	Again, you can't just slap the multiplayer team onto singleplayer and fix it...that's not how dev works, they got hired for knowing multiplayer infrastructure, you can't just fire the multiplayer ...	2021-01-11	negative	0.70	Again, you can't just slap the multiplayer team onto singleplayer and fix it...that's not how dev works, they got hired for knowing multiplayer infrastructure, you can't just fire the multiplayer ...	0.15	positive
gghrxkt	I was there last time I played, low level enemies	2020-12-20	neutral	0.73	I was there last time I played, low level enemies	-0.44	negativ
gdihgwr	If you get it on PS5 launch day you playing PS4 Pro back compatible copy. So probably be 30fps 1080p or 1440p at best with lower settings.	2020-11-24	neutral	0.74	If you get it on PS5 launch day you playing PS4 Pro back compatible copy. So probably be 30fps 1080p or 1440p at best with lower settings.	0.59	positive

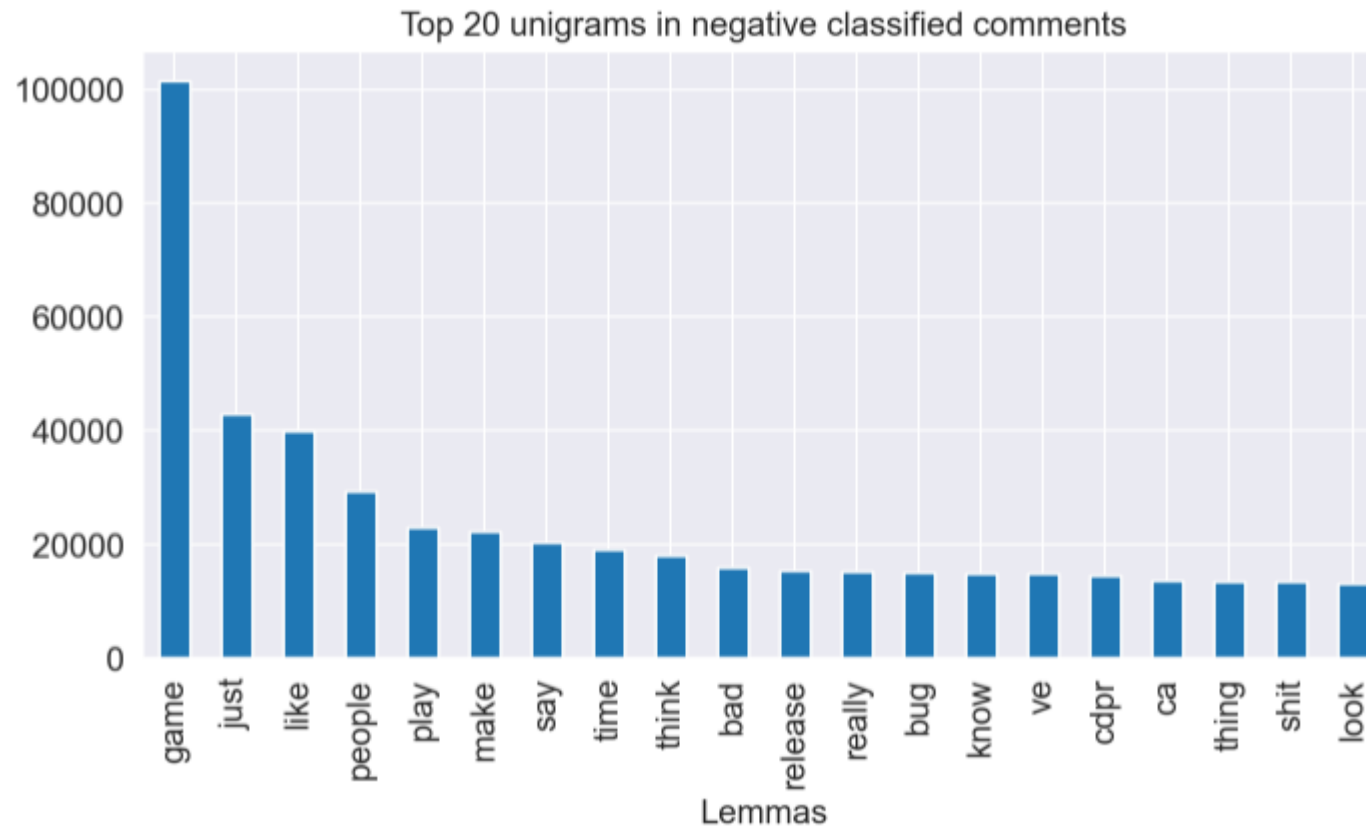
Sentiment und Topic Analyse

Vader im Vergleich mit Roberta

	sentiment_value_roberta	sentiment_value_vader
negative	166159	128644
neutral	184664	103417
positive	84866	203628

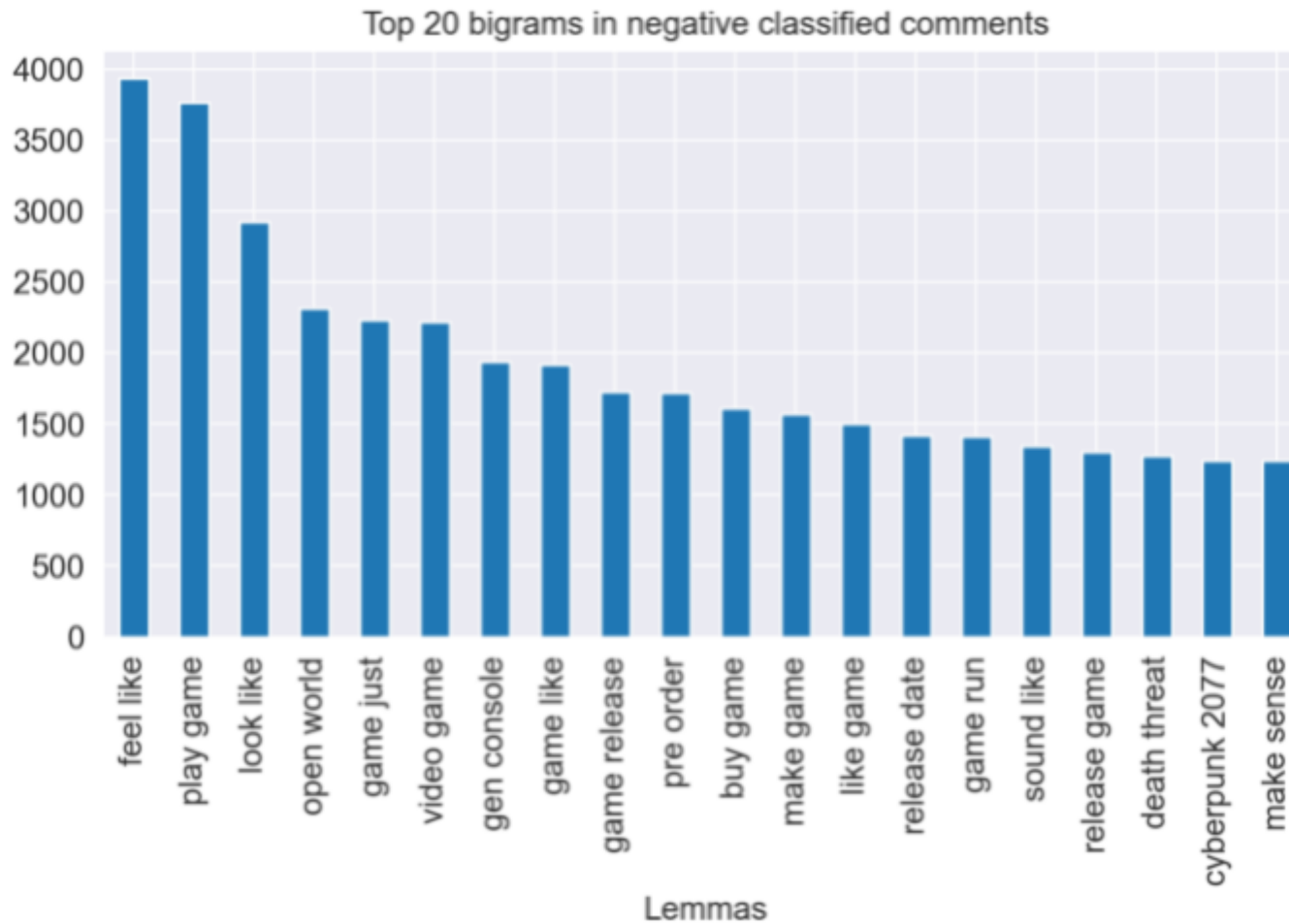
Sentiment und Topic Analyse

Roberta Unigramm



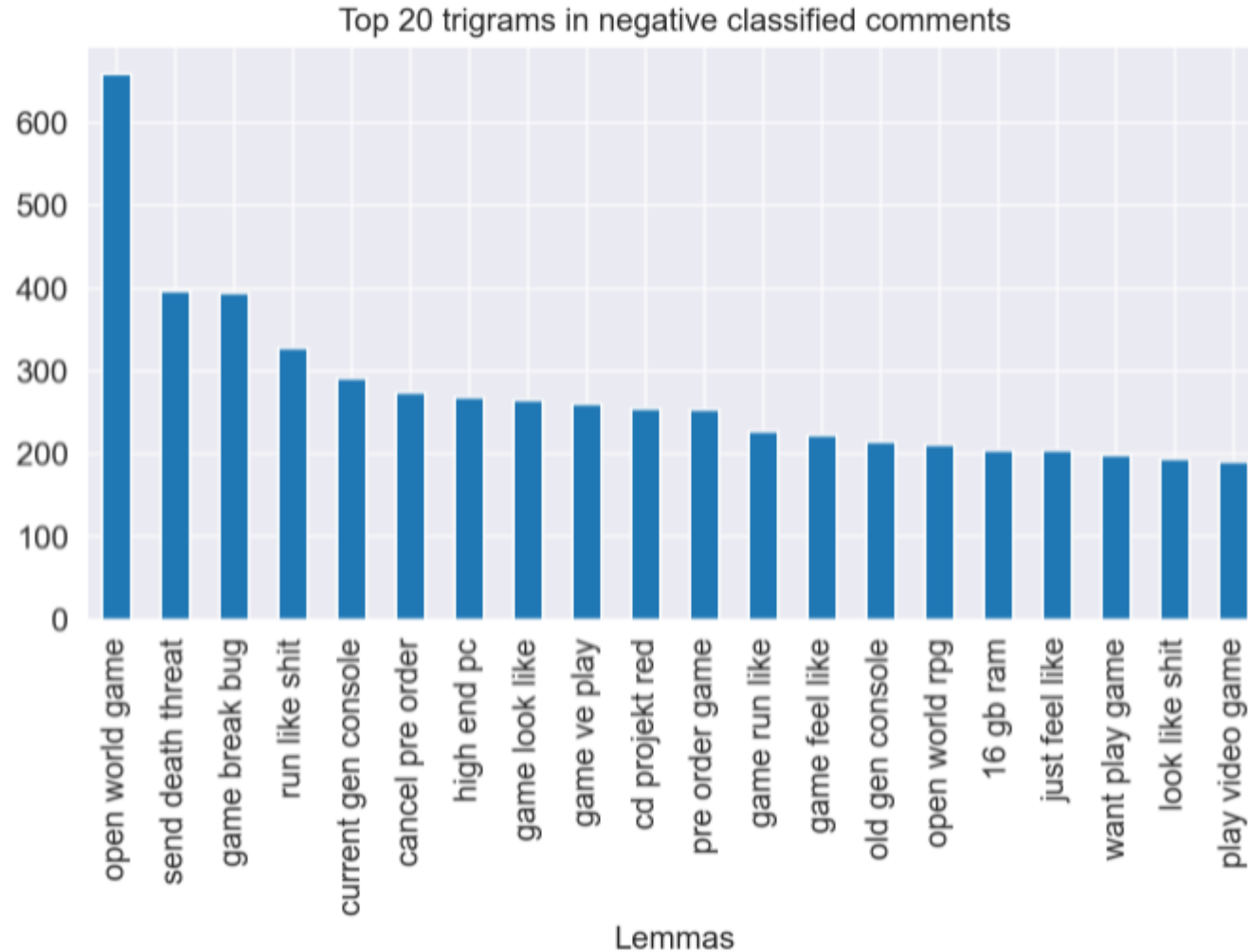
Sentiment und Topic Analyse

Roberta Bigramm



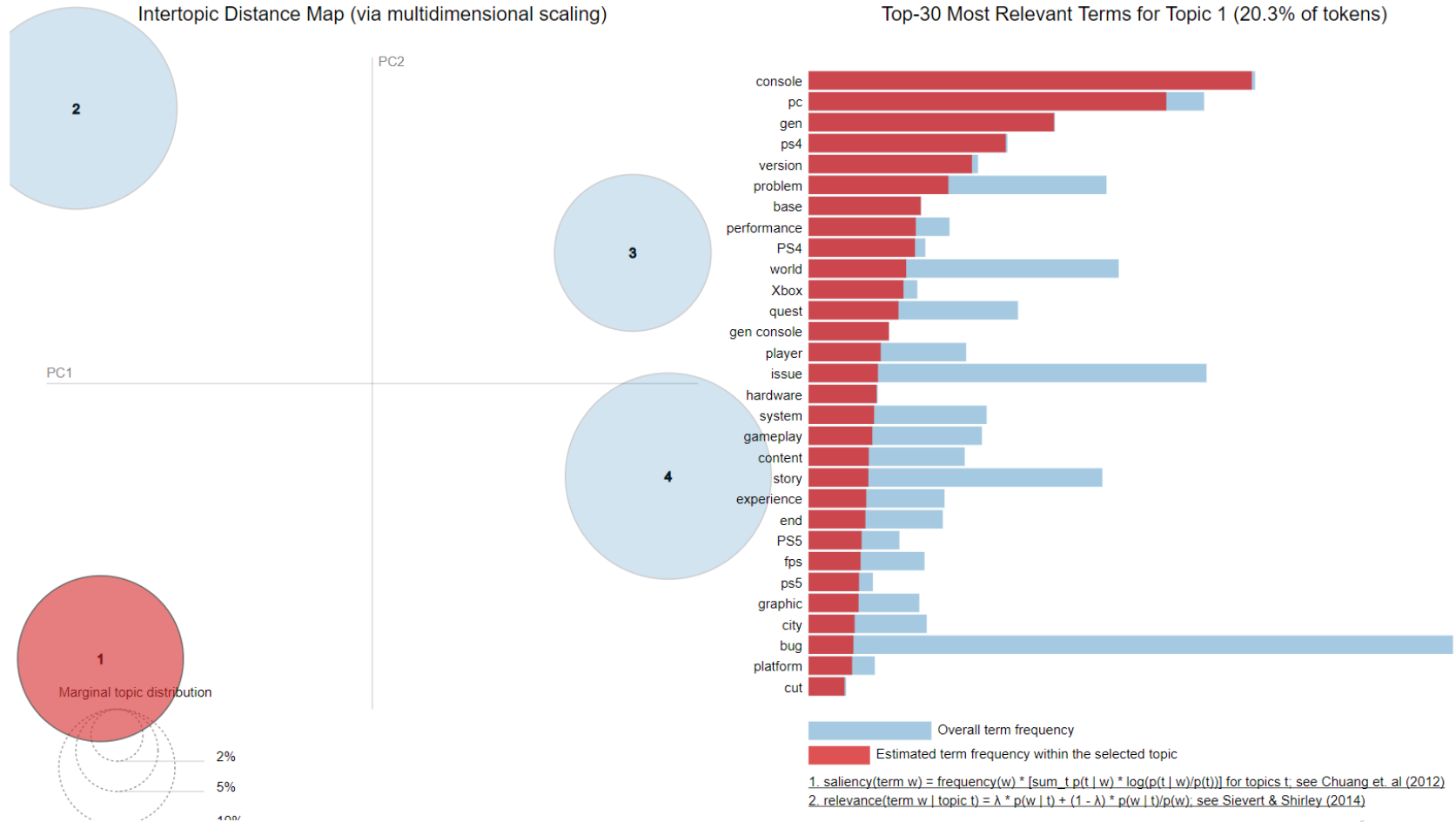
Sentiment und Topic Analyse

Roberta Trigramm



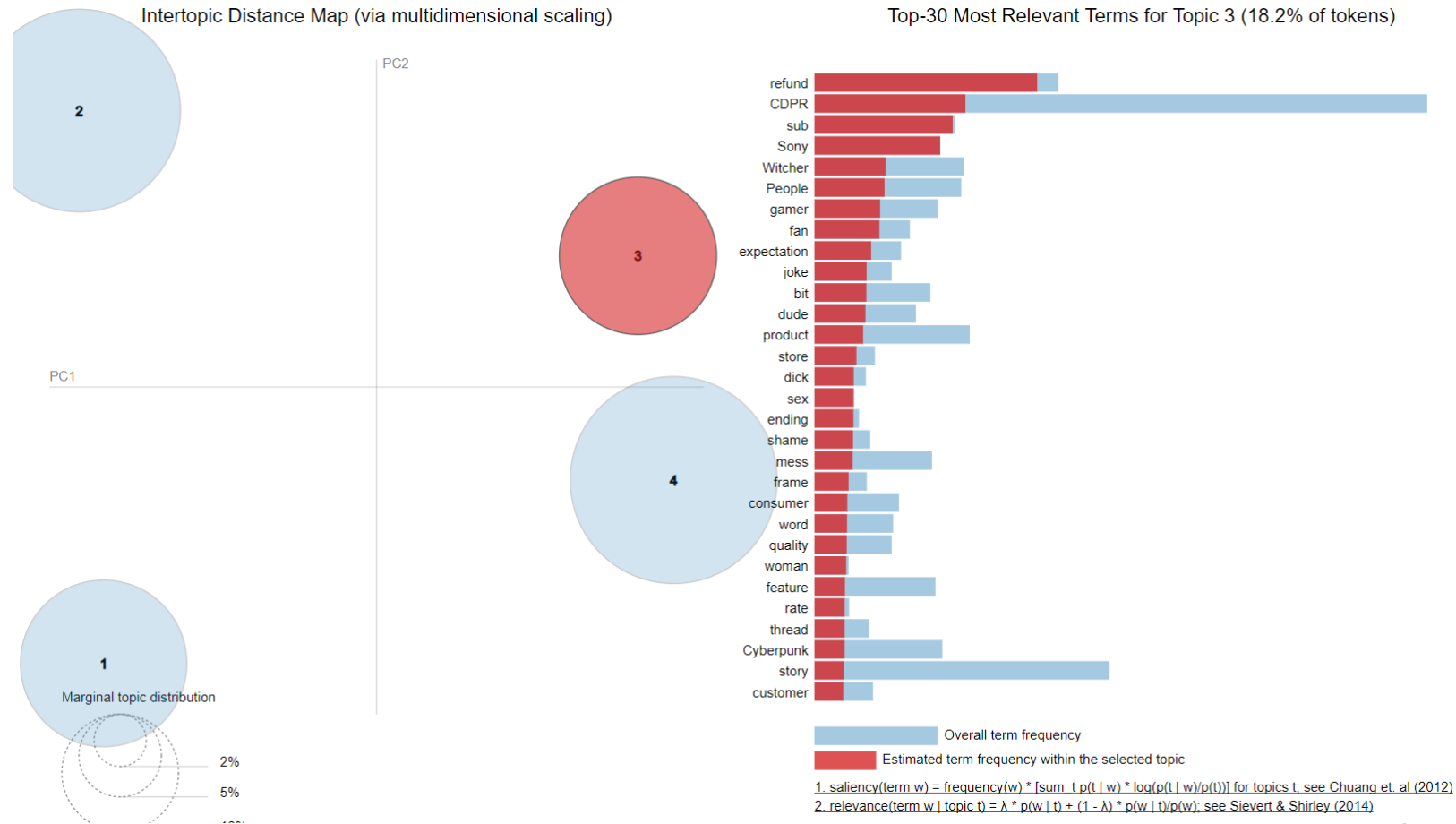
Sentiment und Topic Analyse

Topic Plot



Sentiment und Topic Analyse

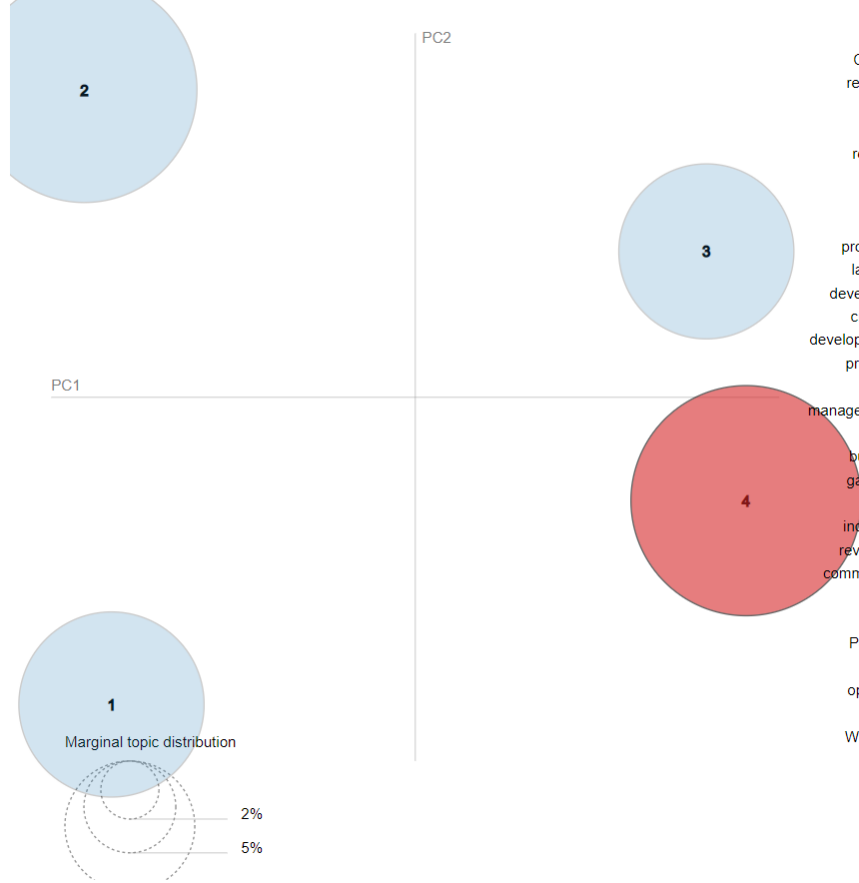
Topic Plot



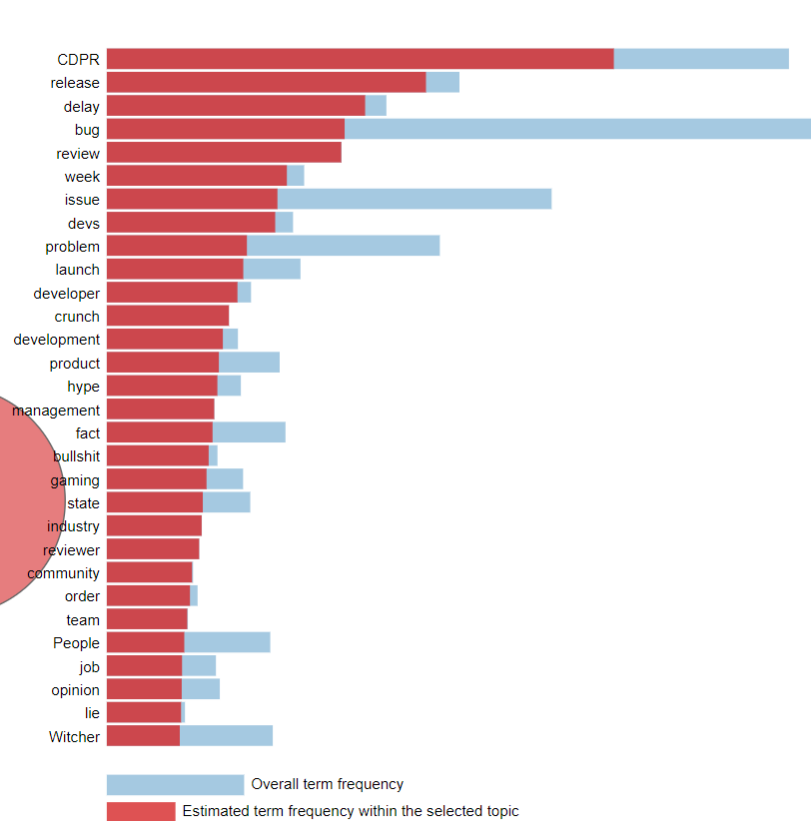
Sentiment und Topic Analyse

Topic Plot

Intertopic Distance Map (via multidimensional scaling)



Top-30 Most Relevant Terms for Topic 4 (31.4% of tokens)

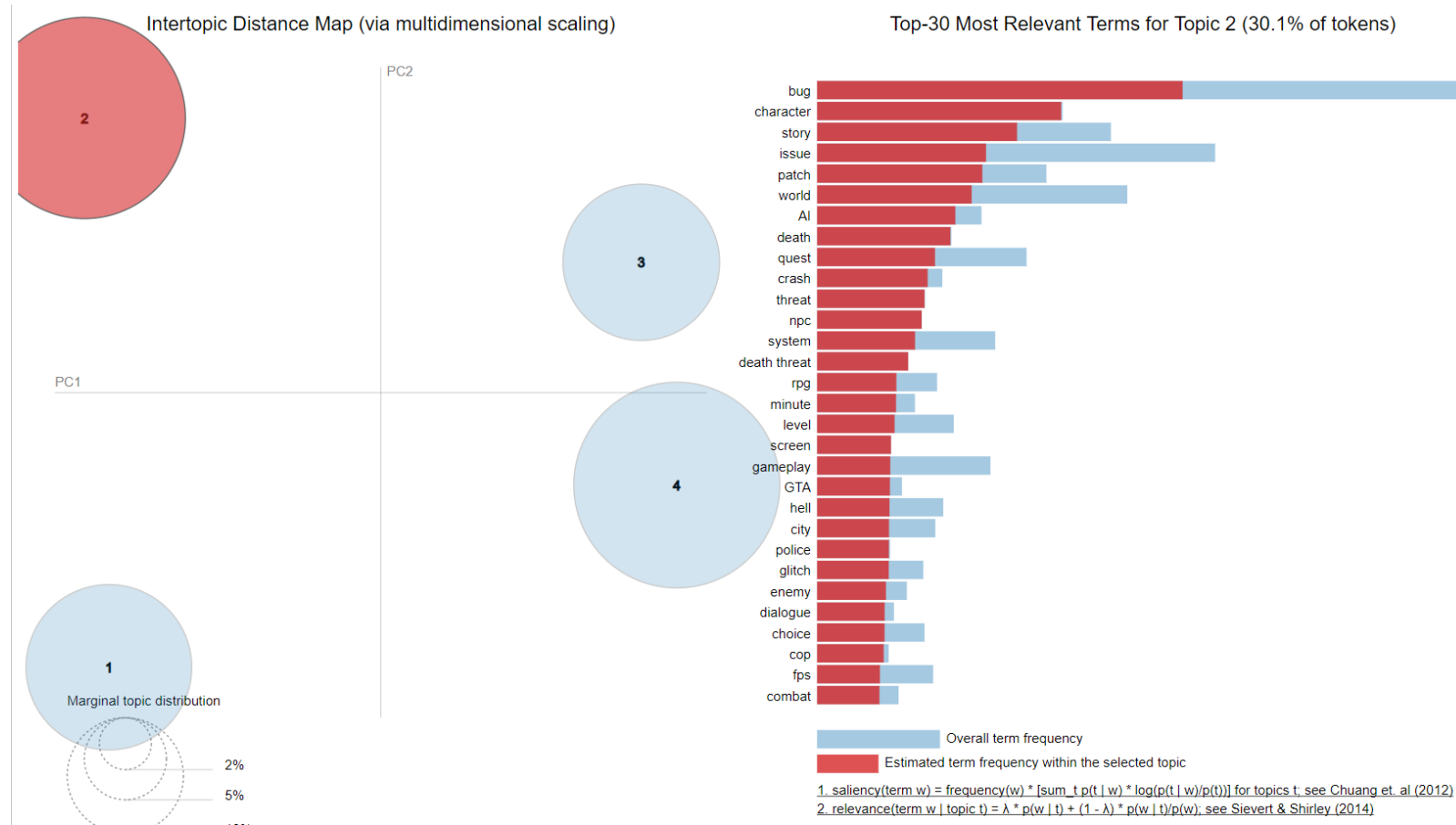


1. $\text{saliency}(\text{term } w) = \text{frequency}(w) * [\sum_t p(t | w) * \log(p(t | w)/p(t))]$ for topics t ; see Chuang et. al (2012)

2. $\text{relevance}(\text{term } w | \text{topic } t) = \lambda * p(w | t) + (1 - \lambda) * p(w | t)/p(w)$; see Sievert & Shirley (2014)

Sentiment und Topic Analyse

Topic Plot



Sentiment und Topic Analyse

Trigramme und Samples

▶ character => character creation screen:

be in **character creation screen** game crash and screen go black

▶ world => bad open world:

sadly be actually one of **bad open world** game think 've ever play in term of game mechanic and interaction

▶ AI => non existent ai:

CDPR promise even go dive into **non existent ai** clunky movement and combat mechanic drive

▶ AI => brain dead ai:

brain dead ai of citizen LITERALLY missing ai of traffic car

Zusammenfassung

- ▶ **Zentrale Analyse-Ergebnisse:**
 - ▶ **Explorative Datenanalyse:**
 - ▶ Vor allem zu Release und bei Verschiebung des Erscheinungsdatums steigende Anzahl an Kommentaren
 - ▶ Wörter wie **delay** und **release** treten verstärkt kurz vor Release auf, **bug**, **console** und **issue** währenddessen und **bug**, **story** und **issue** nach dem Release
 - ▶ -> Probleme stehen über kompletten Zeitraum in der Kritik
 - ▶ **Sentiment Analyse:**
 - ▶ Skeptische Einstellung gegenüber dem Spiel hat sich bewahrheitet
 - ▶ Von knapp 442.000 Kommentaren wurden 166.000 als negativ eingestuft und nur 80.000 als positiv
 - ▶ **Topic Analyse:**
 - ▶ Hauptkritikpunkt wie **game breaking bug**, **run like shit** und **cancel pre order**
 - ▶ Verschiedene Versionen machen Probleme **Console**, **pc**, **gen**, **ps4**
- > **Negative Schlagzeilen der Medien spiegeln die Meinung der Benutzer wider**
- > **Negative Haltung gegenüber dem Spiel wegen den vielen Problemen streckt sich über den kompletten Zeitraum und überdeckt positive Aspekte wie die Story**

Handlungsempfehlungen

- ▶ Spiel hat großes Potential
- ▶ Empfehlung, an den Problemen zu arbeiten
- ▶ Versionen des Spiels sollten verbessert werden
- ▶ Bugs sollten unbedingt behoben werden
- ▶ „open world“ mangelt es an Interaktionen
- ▶ AI der NPC, Polizei und des Straßenverkehrs müssen verbessert werden
- ▶ Spieler über die nächsten Schritte informieren