

Interaction and NLP Based Sentiment Analysis of Bangla Food Review in Social Media

Group Member(s)

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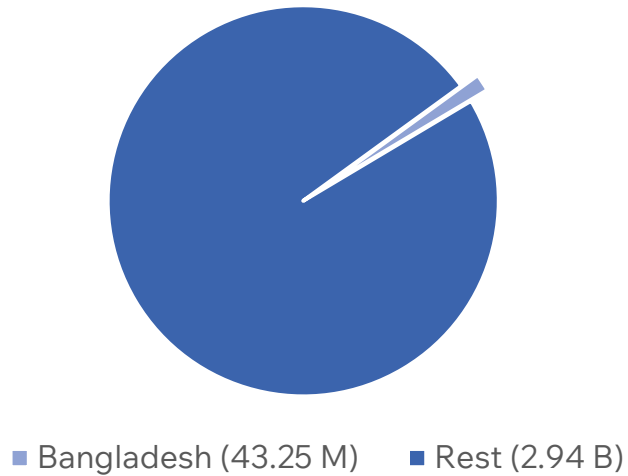
Associate Professor

Department of CSE, BUET

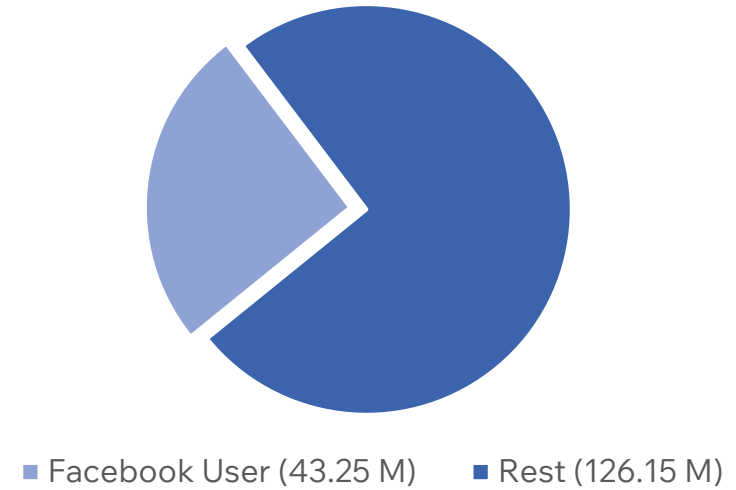
Motivation

Motivation

Total Facebook Users (2023)



Bangladeshi Facebook Users (2023)



Motivation | Facebook



News



Entertainment



Marketplace



Advertisement

Related Works

Related Works | Facebook Domain

[1] Interaction Based Credibility Analysis of News on Facebook Using Machine Learning

Methodologies

Sudipa Saha, Tasin Hoque, Khandaker Abrar Nadib
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<https://doi.org/10.38032/jea.2021.03.001>

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The Zomato logo, featuring the word "zomato" in a bold, italicized, red sans-serif font.The Amazon logo, featuring the word "amazon" in a bold, black sans-serif font, with a curved orange arrow underneath it pointing from the 'a' to the 'z'.

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Problem

Problem

Language

বাংলা

Platform

facebook

Content



Problem | Bangladeshi Top Food Vloggers & Influencers



**Rafsan The
Chotobhai**

Followers:
3.2 M

Platform:
Facebook
YouTube



Khudalagse

Followers:
1.5 M

Platform:
Facebook
YouTube



**Petuk
Couple**

Followers:
1.8 M

Platform:
Facebook
YouTube



Zoltan BD

Followers:
672 K

Platform:
Facebook
YouTube


















Metroman

Followers:
668 K

Platform:
Facebook
YouTube
Instagram

Problem

f FOOD REVIEW PAGES LAST MONTH • FACEBOOK VIDEOS						f FOOD REVIEW PAGES LAST MONTH • PHOTOS						f FOOD REVIEW PAGES LAST MONTH • STATUSES					
TOTAL INTERACTIONS						TOTAL INTERACTIONS						TOTAL INTERACTIONS					
691,358						293,167						26,482					
SHARE OF VOICE		INTERACTIONS ▾	POSTS	RATE		SHARE OF VOICE		INTERACTIONS ▾	POSTS	RATE		SHARE OF VOICE		INTERACTIONS ▾	POSTS	RATE	
51%		Rafsan the Ch...	351,783	4	2.74%	81%		Rafsan the Ch...	237,142	4	1.84%	52%		Rafsan the Ch...	13,857	2	0.22%
31%		Zoltan BD	214,959	11	2.92%	11%		Petuk Couple	32,785	1	1.77%	38%		Zoltan BD	10,008	3	0.50%
10%		Petuk Couple	66,185	4	0.89%	7%		Khudalaqse	19,856	1	1.31%	10%		MetroMan	2,617	2	0.20%
5%		Khudalaqse	33,891	4	0.56%	1%		MetroMan	3,384	2	0.25%	0%		Khudalaqse	0	0	0.00%
4%		MetroMan	24,540	7	0.53%	0%		Zoltan BD	0	0	0.00%	0%		Petuk Couple	0	0	0.00%

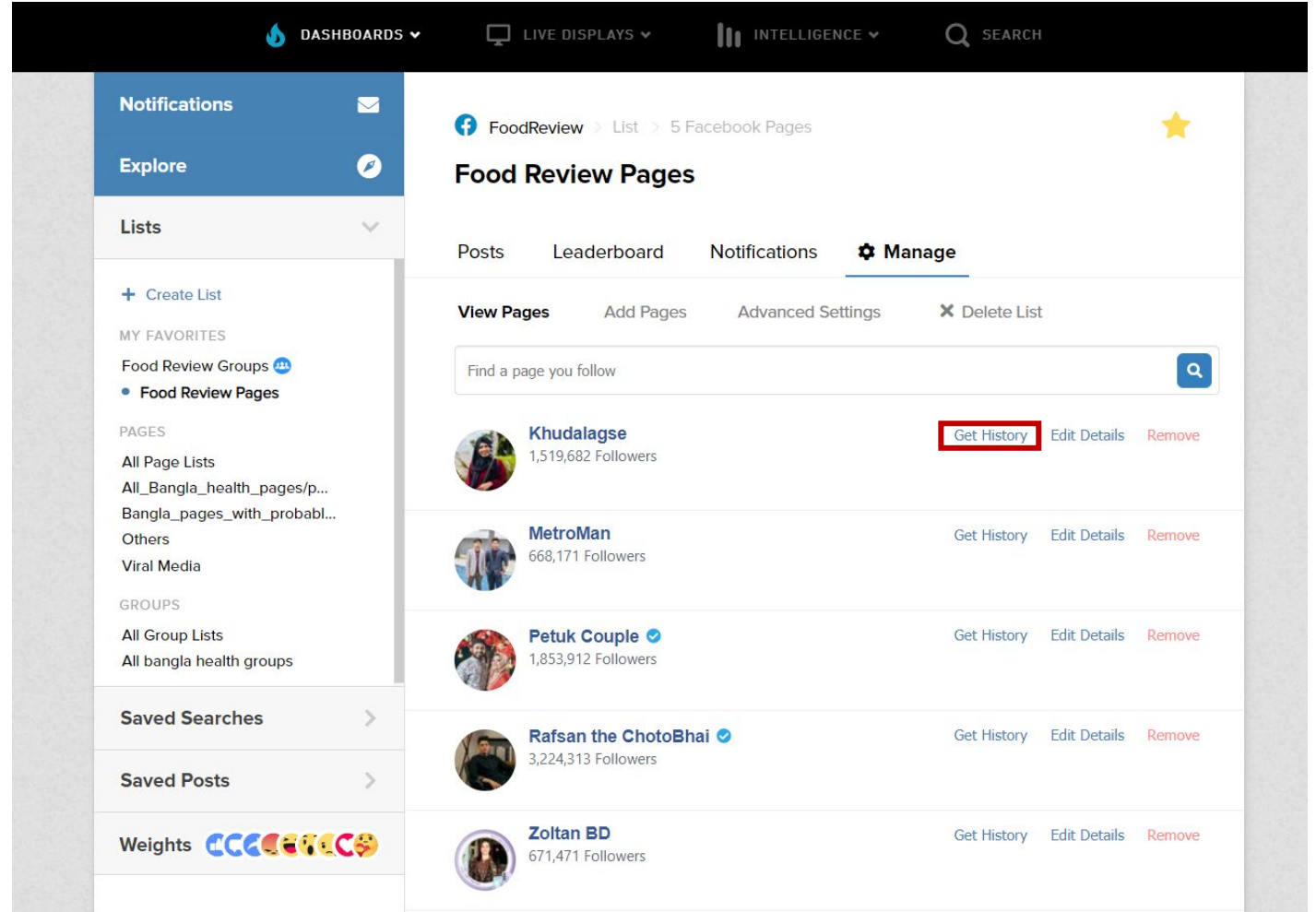
- Video Contents have a high interaction rate!

Data Collection & Pre-processing

Data Collection & Pre-processing



- Social Media analytics tool by Meta (Facebook Inc.)
- Download CSV of Facebook posts of a page/group



[1] <https://apps.crowdtangle.com>

Data Collection & Pre-processing

- Downloaded data is filtered based on some criteria-
 - Post type (Video)
 - Date range (2020 – 2022)
 - Owned
 - Actual food review video
 - Filtered manually

CrowdTangle Data

Post Created Date	Likes	
Post Created Time	Love	Total Views
Type	Wow	Video Length
Total Interactions	Haha	Message
Total Comments	Sad	Link
Shares	Angry	Score
	Care	

Data Collection & Pre-processing

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
1	Page Name	User Name	Facebook	Page Category	Page Description	Page Created	Likes at Post	Followers at Post	Post Created	Post Created	Post Created	Type	Total Likes	Comments	Shares	Love	Wow	Haha	Sad	Angry	Care	Video Shared	Is Video Shared	Post Views	Total Views	Total Video Views	URL	Message	Link	Final Link	Image Text	Link Text	Description	Sponsor Id			
2	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	365560	671471	2023-05-15	15-05-23	4:04:19	Native Video	37,977	24880	1273	305	3019	271	7891	20	97	221	owned	Yes	1651853	1656427	0	###	https://www.৬০ কেজির Dumbbell নিয়ে একি বেলা ত	https://www.facebook.com/zoltan	৬০ কেজির Dumbbell নিয়ে একি বেলা ত						
3	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	364160	670202	2023-05-13	13-05-23	4:00:39	Native Video	5,133	3221	465	96	275	37	956	5	56	22	owned	Yes	108395	130229	0	###	https://www.কাচা অক্টোপাস খেতে কেমন। পুরান ঢাকায়	https://www.facebook.com/zoltan	কাচা অক্টোপাস খেতে কেমন। পুরান ঢাকায়						
4	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	364004	670119	2023-05-12	12-05-23	4:50:49	Native Video	641	377	75	2	72	3	108	0	1	3	share	No		19147	23388	0	###	https://www.Phuket থেবে	https://www.facebook.com/100007	Nusrat's Ele Nail Art From Phuket. Th					
5	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	363200	669681	2023-05-05	05-05-23	7:00:01	Native Video	6,777	4336	377	48	251	21	1694	6	24	20	owned	Yes	153674	154204	0	0:02:11	https://www.আলাদিনের চেরাপ থেকে কি রিয়ে আসলে	https://www.facebook.com/zoltan	আলাদিনের চেরাপ থেকে কি রিয়ে আসলে						
6	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	363200	669681	2023-05-04	04-05-23	20:28:42	Status	5,847	3582	271	27	68	12	8	1865	1	13		-		0	0	0	N/A	https://www.ঢাকায় ডুমিকম্প ৪.৯ আল্লাহ সবাইকে হেঁচকিত করেন							
7	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	362774	669334	2023-05-04	04-05-23	4:00:35	Native Video	11,564	8294	848	240	1151	60	891	11	18	51	owned	Yes	440072	471603	0	###	https://www.বিশ্বের সব চাই	https://www.facebook.com/zoltan	বিশ্বের সব চাইতে সস্তা Lasagna মাত্র ৯৯৯ ট						
8	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	362174	668799	2023-05-03	03-05-23	3:08:47	Native Video	595	390	52	1	54	2	94	1	1	0	share	Yes	15092	81830	0	###	https://www.Noodles এর	https://www.facebook.com/zoltan	Zoltan BD Noodles এর Sandwich। N						
9	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	361565	668261	2023-05-02	02-05-23	4:02:48	Native Video	8,987	6789	526	107	718	25	761	3	15	43	owned	Yes	206949	227168	0	###	https://www.Restaurant	https://www.facebook.com/zoltan	Restaurant ও Basket Ball খেলা যায়। গ্র						
10	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	360734	667510	2023-05-01	01-05-23	4:05:33	Native Video	47,288	35144	1041	292	7361	118	2963	16	42	311	owned	Yes	1348814	1350578	0	###	https://www.Food Vlog	https://www.facebook.com/zoltan	Food Vlogger এর বাসায় Food Vloggi						
11	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	359790	666820	2023-04-27	27-04-23	4:00:01	Native Video	8,836	6448	517	31	580	29	1179	2	20	30	owned	Yes	521175	539937	0	###	https://www.কলকাতার প	https://www.facebook.com/zoltan	কলকাতায় পানিপুরি Challenge। কে জিত						
12	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	358616	665878	2023-04-23	23-04-23	4:34:22	Status	2,680	871	148	11	22	26	1589	7	0	6		-		0	0	0	N/A	https://www.TikTok এর CEO জানালেন তার নিজের সন্তান ও পরিবারের কেউ TikTok ব্যবহার করেন না।							
13	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	358616	665878	2023-04-23	23-04-23	3:17:49	Native Video	1,645	1022	113	21	189	8	270	2	7	13	share	No		41176	402716	0	###	https://www.https://www.https://www.facebook.com/somo	সময়ের গল্প	জলচাঁন বিভিন্ন মাসিক আয়					
14	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	358399	665784	2023-04-21	21-04-23	11:05:52	Native Video	2,094	1320	180	25	148	9	389	2	8	13	owned	Yes	52806	81810	0	###	https://www.Noodles এর	https://www.facebook.com/zoltan	Noodles এর Sandwich। Noodles এর E						
15	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	358058	665490	2023-04-20	20-04-23	16:03:45	Status	1,489	556	77	4	14	0	835	0	1	2		-		0	0	0	N/A	https://www.সৌদি Question out করে দিলো বাংলাদেশের চাঁদ দেখা কমিটির জন্য। শনিবার সিদা							
16	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	355877	663433	2023-04-18	18-04-23	6:20:43	Native Video	###	38099	1419	349	4726	121	4789	27	130	230	owned	Yes	1348733	1363596	0	###	https://www.International	https://www.facebook.com/zoltan	International Food Vlogger যখন আয়						
17	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	354747	662424	2023-04-16	16-04-23	12:23:05	Native Video	2,117	1441	125	15	168	9	321	3	16	19	owned	Yes	40085	40131	0	###	https://www.৩০০ টাকায়	https://www.facebook.com/zoltanbdvlog/videos/918064345910335/							
18	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	354747	662424	2023-04-16	16-04-23	3:06:28	Native Video	37,373	20209	1505	263	1092	94	13974	19	113	104	owned	Yes	1674633	1681205	0	###	https://www.সেহরিতে আউ	https://www.facebook.com/zoltan	সেহরিতে আজব কিসমতের লোক। Types of						
19	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	353828	661750	2023-04-13	13-04-23	6:11:26	Native Video	31,543	25398	539	100	1800	82	3372	18	57	177	owned	Yes	295657	308814	0	###	https://www.হালামি বেচতে	https://www.facebook.com/zoltanbdvlog/videos/567881021826239/							
20	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	351479	659619	2023-04-09	09-04-23	11:56:37	Native Video	525	339	44	4	47	4	79	2	1	5	share	No		17128	251633	0	###	https://www.মাথায় চুল থা	https://www.facebook.com/100007	Nusrat's Ele মাথায় কি চুল থাকবে এই Tre					
21	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	350343	658556	2023-04-08	08-04-23	5:03:23	Native Video	11,430	7561	871	100	952	58	1794	6	27	61	owned	Yes	356154	401977	0	0:06:11	https://www.পদা বিরিয়ানি	https://www.facebook.com/zoltan	পদা বিরিয়ানি বানানো এতো সহজ 🍴 সৈদর						
22	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	348347	656660	2023-04-07	07-04-23	11:58:15	Live Video	361	286	11	2	48	1	8	2	0	3	share	No		14325	24840	0	###	https://www.Eid mela Di	https://www.facebook.com/100007	Nusrat's Ele EID MELA at Dhanmondi					
23	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	348347	656660	2023-04-07	07-04-23	4:57:52	Photo	3,439	2371	237	4	716	15	42	0	2	52		-		0	0	0	N/A	https://www.থাকচি সিদ	https://www.facebook.com/photo.php?fbid=646039980866111&set=a.42						
24	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	347954	656381	2023-04-06	06-04-23	11:47:23	Native Video	###	22847	4049	553	2771	271	22628	51	255	173	owned	Yes	2013658	2104762	0	###	https://www.২০,০০০ টাক	https://www.facebook.com/zoltan	২০,০০০ টাকার সোনার জিলাপি						
25	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	347954	656381	2023-04-06	06-04-23	7:26:06	Photo	5,185	3342	568	10	814	26	353	19	2	51		-		0	0	0	N/A	https://www.ঢাকরি না থা	https://www.facebook.com/vivova/e vivo Vaze						
26	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	347954	656381	2023-04-06	06-04-23	5:47:28	Live Video	187	100	10	3	25	1	47	0	0	1	share	No		7542	12961	0	###	https://www.facebook	https://www.facebook.com/chann	Channel i	চলছে দারাজ প্রজেক্টস কুক				
27	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	347704	656225	2023-04-05	05-04-23	7:00:01	Native Video	11,650	7935	879	117	1012	56	1527	4	40	80	owned	Yes	373793	402197	0	###	https://www.১টা কিনলে ৫	https://www.facebook.com/zoltan	১টা কিনলে ৩টা ফ্রি তাও আবার 5 star bu						
28	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	347061	655738	2023-04-03	03-04-23	8:54:17	Native Video	206	139	20	1	39	1	5	0	0	1	share	No		4789	6758	0	0:17:36	https://www.রাধুনির আসা	https://www.facebook.com/ntvdi	NTV	চিকেন চিজ স্টিক ও ব্যানানা f				
29	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	357141	664626	2023-04-02	02-04-23	18:29:32	Photo	6,764	4607	408	5	1560	31	58	1	3	91		-		0	0	0	N/A	https://www.Glowing Pc	https://www.facebook.com/Aura Light	Zoltan BD					
30	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	346653	655435	2023-04-02	02-04-23	7:00:01	Native Video	30,165	10377	1504	130	452	120	17393	27	113	49	owned	Yes	1081056	1151861	0	###	https://www.তরমুজের Piz	https://www.facebook.com/zoltan	তরমুজের Pizza খাবেন নাকি? Tiktok Foo						
31	Zoltan BD	zoltanbdvlog	1E+14	VIDEO_CRE	BD In this page	#####	346360	655242	2023-04-01	01-04-23	7:00:01	Native Video	9,382	6713	826	113	1258	82	308	11	19	52	owned	Yes	303412	351532	0	###	https://www.৩০৫০ টাকায়	https://www.facebook.com/zoltan	৩০৫০ টাকায় ৫ তারকা রোটেলে ইকরত ব্যু						

Data Collection & Pre-processing

- Comments for each Facebook Videos are downloaded
 - 20-30 comments per post
- Comments Language
 - Bangla
 - English
 - Banglish



The screenshot shows a Facebook post by user Khudalagse, dated 18 April at 21:30. The post is titled 'Khudalagse posted a video to the playlist Ramadan Diaries!' and includes the text 'Puran Dhaka Street Food Tour in Ramadan! নতুন কী কী খেলায়?... See more'. A 'Follow' button and a three-dot menu are visible. Below the post, the 'All comments' section is expanded, showing three comments. The first comment is from the author, Khudalagse, thanking viewers and providing a link to 'Baig Bros'. The second comment is from 'Baig Bros', a digital creator from Dhaka, Bangladesh, who has 7 reactions. The third comment is from 'Subha Saida', a top fan, who says 'Appo akhon ato deri kore video deo keno' with three heart reactions. The author, Khudalagse, has replied to Subha Saida's comment.

Khudalagse posted a video to the playlist Ramadan Diaries!
18 April at 21:30 · 🌐

Puran Dhaka Street Food Tour in Ramadan! নতুন কী কী খেলায়?...
See more

All comments ▼

Author
Khudalagse
Special Thanks for being in the video! This was fun.
Baig Bros: <https://www.facebook.com/BaignBros...>
See more

Baig Bros
Digital creator
Dhaka, Dhaka Division, Bangladesh
3 w Edited
7
1 reply

Top fan
Subha Saida
Appo akhon ato deri kore video deo keno ❤️❤️❤️
3 w

Author
Khudalagse
Subha Saida Finals shamne 🙏

Data Collection & Pre-processing



A modern Pythonic implementation of the popular Bengali phonetic-typing software **Avro Phonetic**.

Downloads 14k Python 3.8 | 3.9 | 3.10 | 3.11
License MIT

Comments are passed through avro.py parser



Google Translate API











































































































































































































































































Parsed Bangla text is sent to API for further cleaning



Another level of human text filtering is done

Data Collection & Pre-processing

- Total Downloaded Dataset Size
 - Total Posts : 905
 - Total Comments : 26,004

 khudalagse_1.csv	 khudalagse_39.csv	 khudalagse_77.csv	 khudalagse_115.csv	 khudalagse_153.csv	 metroman_21.csv	 metroman_59.csv
 khudalagse_2.csv	 khudalagse_40.csv	 khudalagse_78.csv	 khudalagse_116.csv	 khudalagse_154.csv	 metroman_22.csv	 metroman_60.csv
 khudalagse_3.csv	 khudalagse_41.csv	 khudalagse_79.csv	 khudalagse_117.csv	 khudalagse_155.csv	 metroman_23.csv	 metroman_61.csv
 khudalagse_4.csv	 khudalagse_42.csv	 khudalagse_80.csv	 khudalagse_118.csv	 khudalagse_156.csv	 metroman_24.csv	 metroman_62.csv
 khudalagse_5.csv	 khudalagse_43.csv	 khudalagse_81.csv	 khudalagse_119.csv	 khudalagse_157.csv	 metroman_25.csv	 metroman_63.csv
 khudalagse_6.csv	 khudalagse_44.csv	 khudalagse_82.csv	 khudalagse_120.csv	 khudalagse_158.csv	 metroman_26.csv	 metroman_64.csv
 khudalagse_7.csv	 khudalagse_45.csv	 khudalagse_83.csv	 khudalagse_121.csv	 khudalagse_159.csv	 metroman_27.csv	 metroman_65.csv
 khudalagse_8.csv	 khudalagse_46.csv	 khudalagse_84.csv	 khudalagse_122.csv	 khudalagse_160.csv	 metroman_28.csv	 metroman_66.csv
 khudalagse_9.csv	 khudalagse_47.csv	 khudalagse_85.csv	 khudalagse_123.csv	 khudalagse_161.csv	 metroman_29.csv	 metroman_67.csv
 khudalagse_10.csv	 khudalagse_48.csv	 khudalagse_86.csv	 khudalagse_124.csv	 khudalagse_162.csv	 metroman_30.csv	 metroman_68.csv
 khudalagse_11.csv	 khudalagse_49.csv	 khudalagse_87.csv	 khudalagse_125.csv	 khudalagse_163.csv	 metroman_31.csv	 metroman_69.csv
 khudalagse_12.csv	 khudalagse_50.csv	 khudalagse_88.csv	 khudalagse_126.csv	 khudalagse_164.csv	 metroman_32.csv	 metroman_70.csv
 khudalagse_13.csv	 khudalagse_51.csv	 khudalagse_89.csv	 khudalagse_127.csv	 khudalagse_165.csv	 metroman_33.csv	 metroman_71.csv
 khudalagse_14.csv	 khudalagse_52.csv	 khudalagse_90.csv	 khudalagse_128.csv	 khudalagse_166.csv	 metroman_34.csv	 metroman_72.csv
 khudalagse_15.csv	 khudalagse_53.csv	 khudalagse_91.csv	 khudalagse_129.csv	 khudalagse_167.csv	 metroman_35.csv	 metroman_73.csv
 khudalagse_16.csv	 khudalagse_54.csv	 khudalagse_92.csv	 khudalagse_130.csv	 khudalagse_168.csv	 metroman_36.csv	 metroman_74.csv
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 khudalagse_28.csv	 khudalagse_66.csv	 khudalagse_104.csv	 khudalagse_142.csv	 metroman_10.csv	 metroman_48.csv	 metroman_86.csv
 khudalagse_29.csv	 khudalagse_67.csv	 khudalagse_105.csv	 khudalagse_143.csv	 metroman_11.csv	 metroman_49.csv	 metroman_87.csv
 khudalagse_30.csv	 khudalagse_68.csv	 khudalagse_106.csv	 khudalagse_144.csv	 metroman_12.csv	 metroman_50.csv	 metroman_88.csv
 khudalagse_31.csv	 khudalagse_69.csv	 khudalagse_107.csv	 khudalagse_145.csv	 metroman_13.csv	 metroman_51.csv	 metroman_89.csv
 khudalagse_32.csv	 khudalagse_70.csv	 khudalagse_108.csv	 khudalagse_146.csv	 metroman_14.csv	 metroman_52.csv	 metroman_90.csv
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 khudalagse_34.csv	 khudalagse_72.csv	 khudalagse_110.csv	 khudalagse_148.csv	 metroman_16.csv	 metroman_54.csv	 metroman_92.csv
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 khudalagse_38.csv	 khudalagse_76.csv	 khudalagse_114.csv	 khudalagse_152.csv	 metroman_20.csv	 metroman_58.csv	 metroman_96.csv

Data Collection & Pre-processing

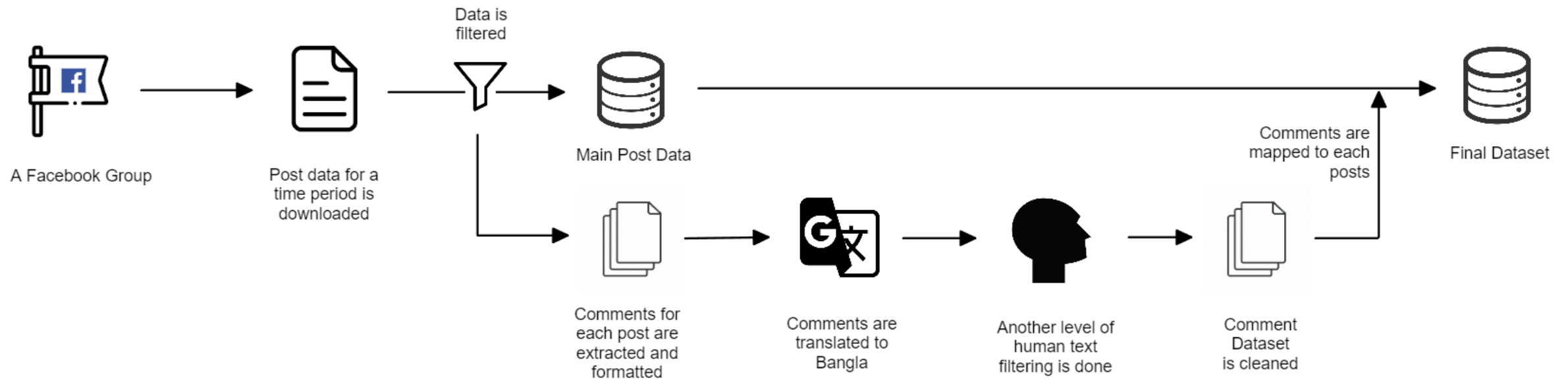


Fig: Data collection and pre-processing steps

Methodology

Methodology

- Classify Facebook Comments- positive/negative

BanglaBERT

Pretrained model from
BUET CSE NLP Group for
Sequence Classification

1. SentNoB Dataset
2. ABSA Dataset
3. Online Restaurant
Reviews Dataset

Fine-tuned for Sequence
Classification on 3 datasets



Classify the comments as
either **positive** or **negative**

[1] [csebuetslp/banglabert](https://github.com/csebuetslp/banglabert)

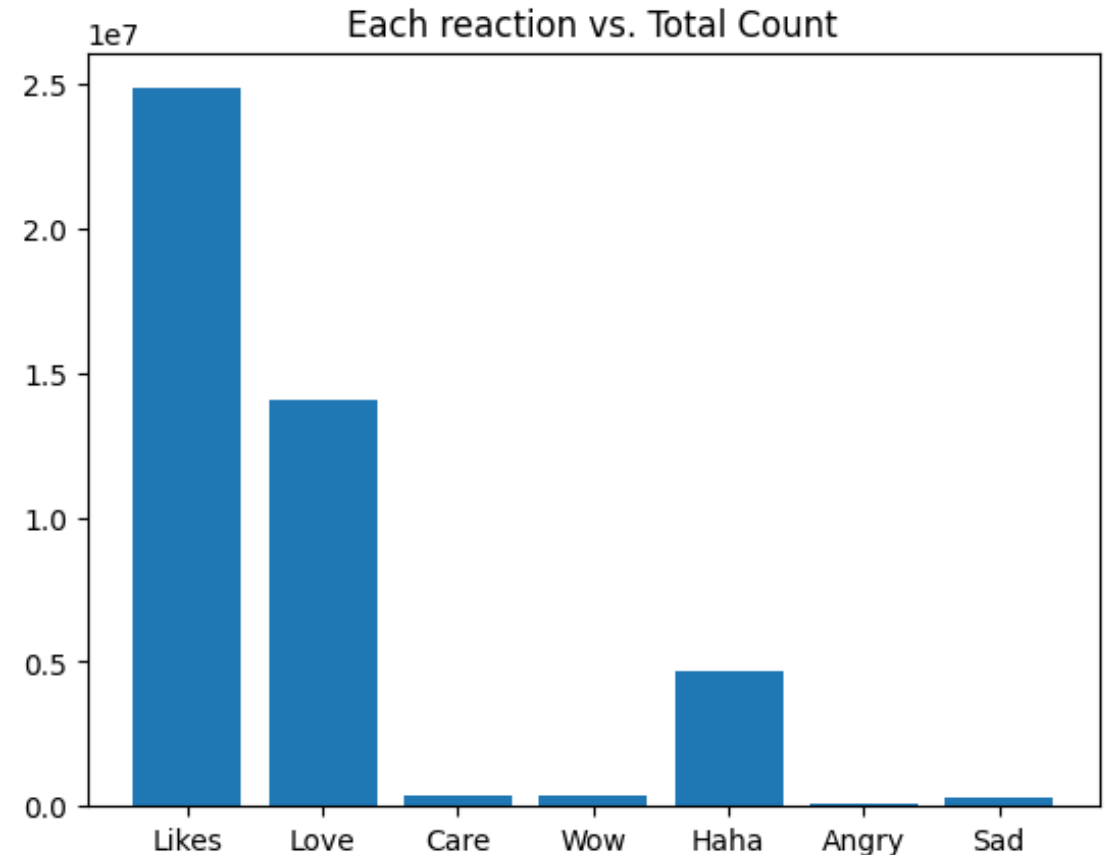
[2] [SentNoB | Kaggle](https://www.kaggle.com/datasets/sentnodb/sentnodb)

[3] <https://doi.org/10.3390/data3020015>

[4] <https://github.com/eftekhar-hossain/Bengali-Restaurant-Reviews/>

Methodology

- **Discarded Like reaction**
 - Facebook News Feed Ranking gives less importance to “Like”
 - Like count is almost equal to sum of other reactions



Methodology

- Special Reactions Based Scoring System
 - Positive
 - Negative

Pratama, Ahmad. (2022). "Sentiment Analysis of Facebook Posts through Special Reactions: The Case of Learning from Home in Indonesia Amid COVID-19". Jurnal Ilmiah Teknik Elektro Komputer dan Informatika. 8. 83-92. 10.26555/jiteki.v8i1.23615.

C. Freeman, M. K. Roy, M. Fattoruso and H. Alhoori, "Shared Feelings: Understanding Facebook Reactions to Scholarly Articles," 2019 ACM/IEEE Joint Conference on Digital Libraries (JCDL), Champaign, IL, USA, 2019, pp. 301-304, doi: 10.1109/JCDL.2019.00050.

n_{positive} = Sum of all positive reactions

n_{negative} = Sum of all negative reactions

$$\text{polarity} = \frac{n_{\text{positive}} - n_{\text{negative}}}{n_{\text{positive}} + n_{\text{negative}}}$$

Methodology

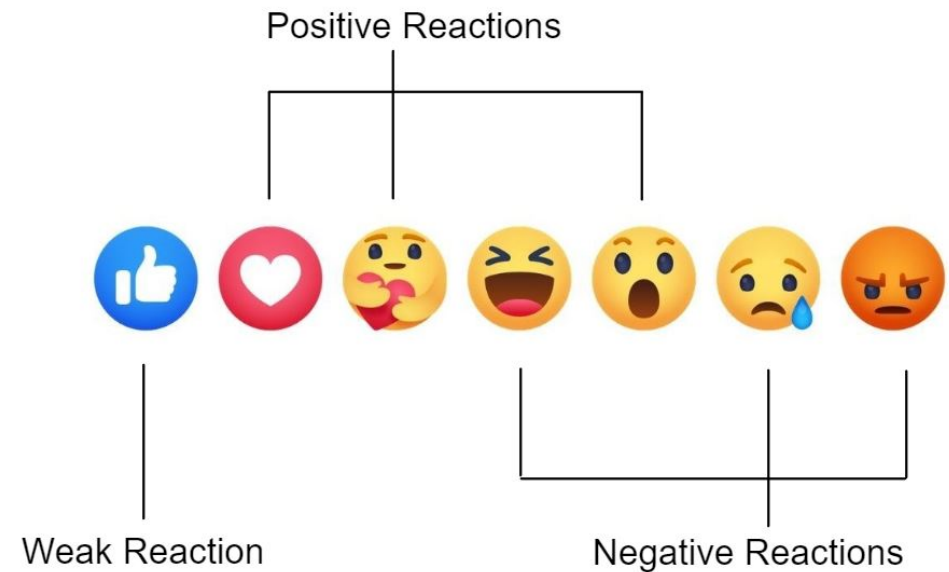
- Reaction Classification
 - Positive: Love, Care, Wow
 - Negative: Haha, Angry, Sad

n_x = count for reaction x

$n_{\text{positive}} = n_{\text{love}} + n_{\text{care}} + n_{\text{wow}}$

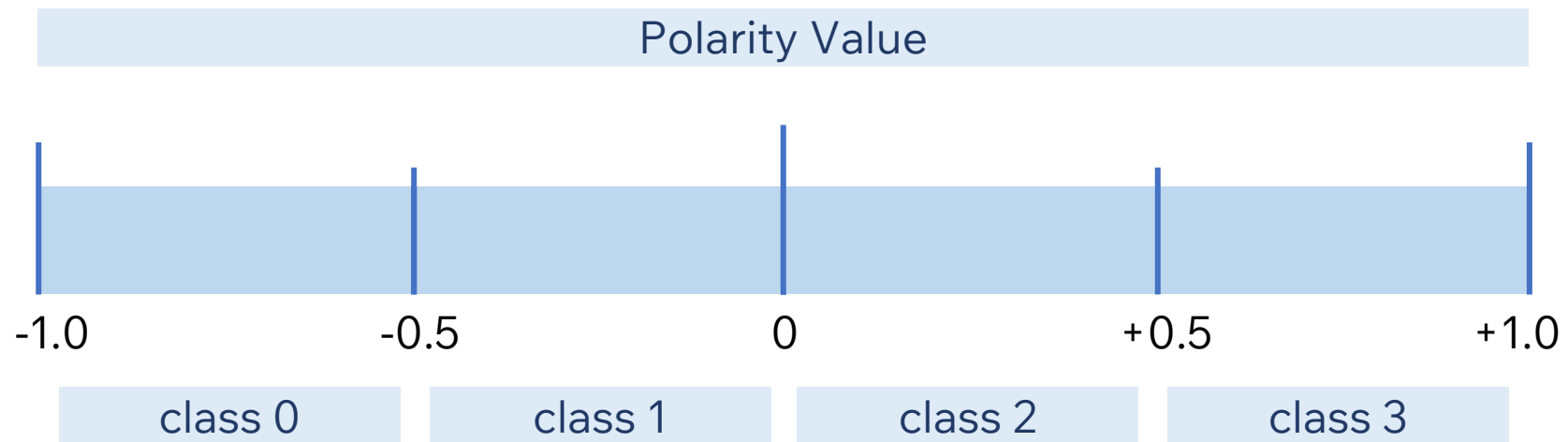
$n_{\text{negative}} = n_{\text{haha}} + n_{\text{angry}} + n_{\text{sad}}$

$$\text{polarity} = \frac{n_{\text{positive}} - n_{\text{negative}}}{n_{\text{positive}} + n_{\text{negative}}}$$



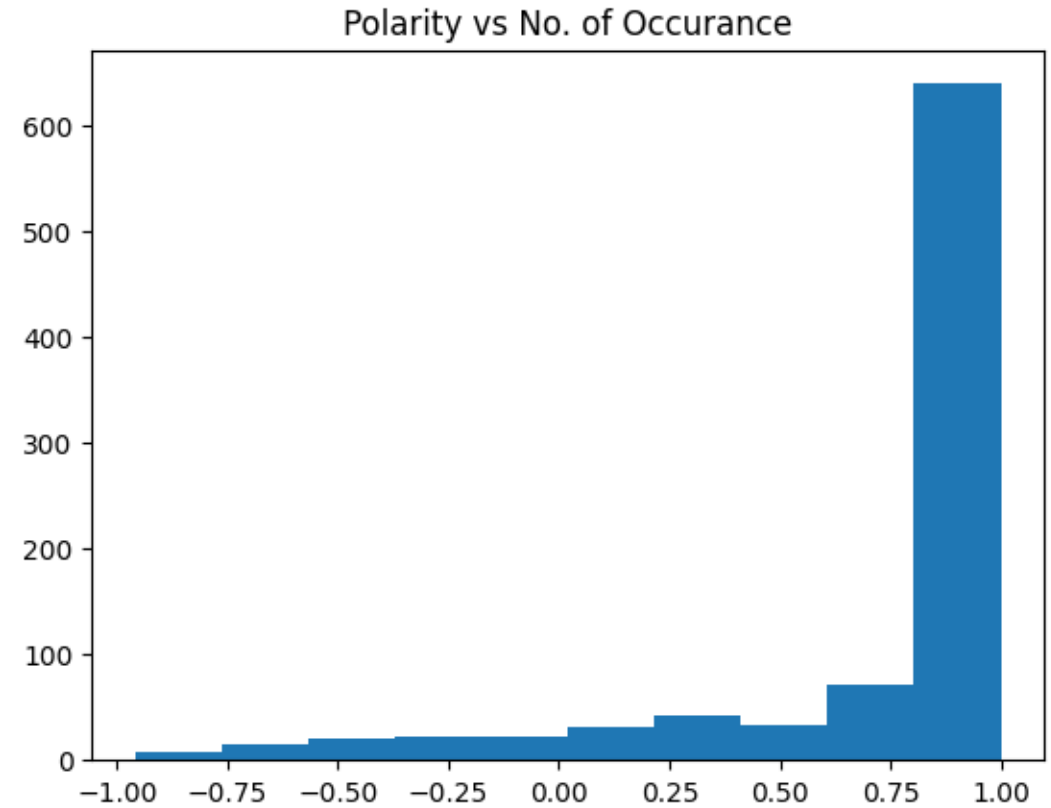
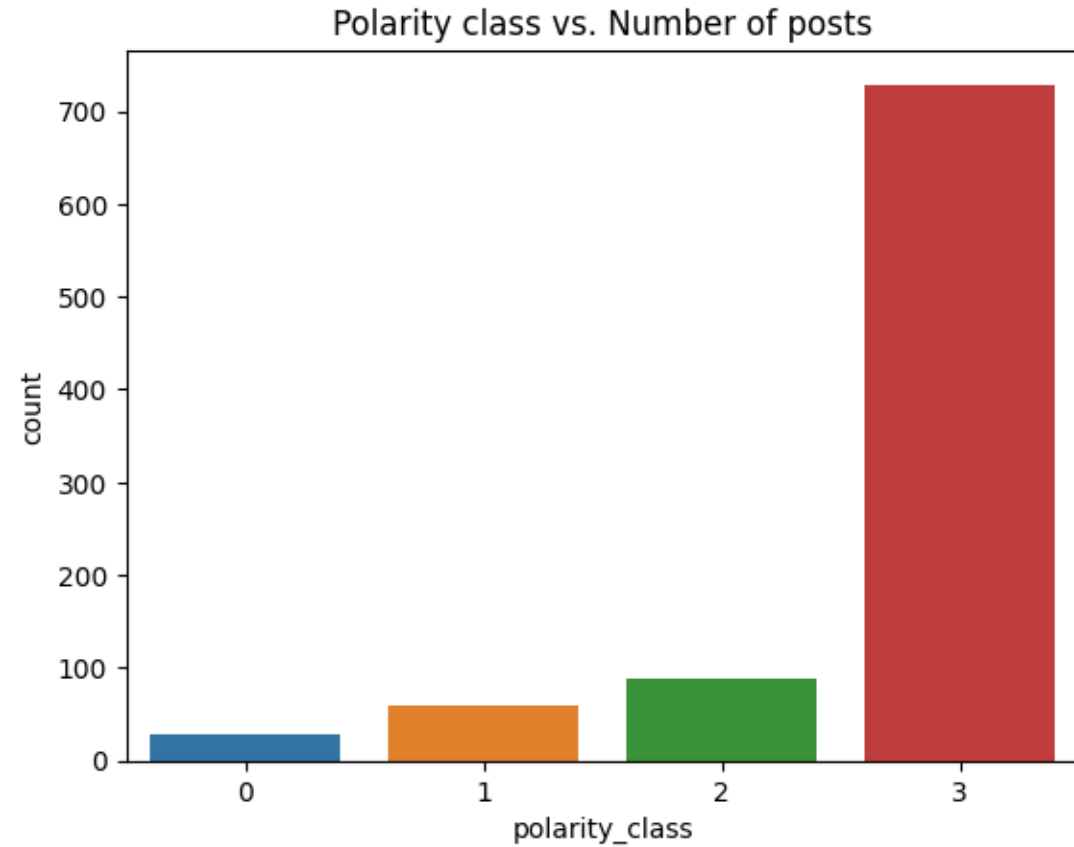
Methodology

- Divide into four classes based on Polarity Value



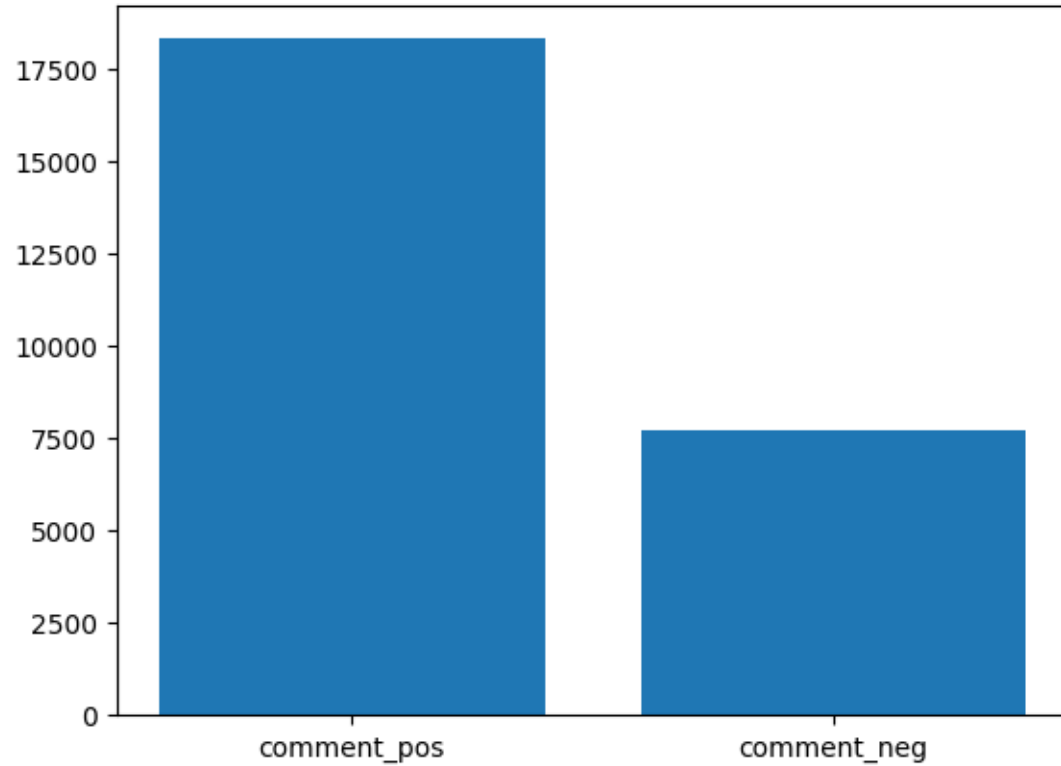
Results

Results

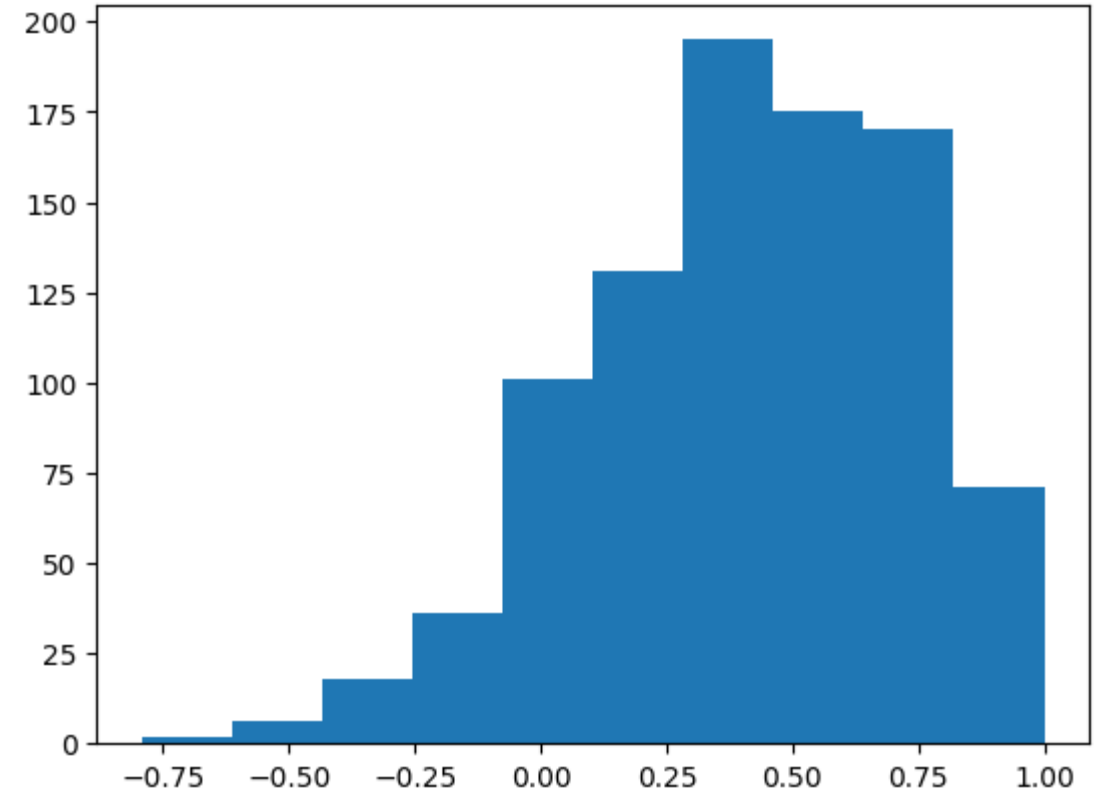


Results

Comment Type vs. Total Count

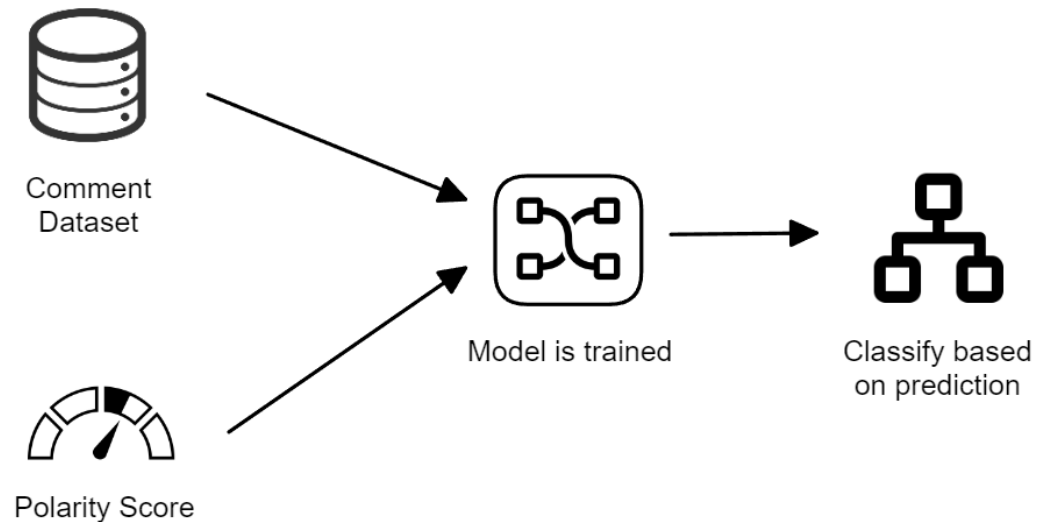


Comment Polarity vs. No. of occurrence



Results

- Dataset is split 70/30
- Comments classes-
 - Positive
 - Negative
- Features (X)
 - No. of positive comments
 - No. of negative comments
- Output (y)
 - Polarity class

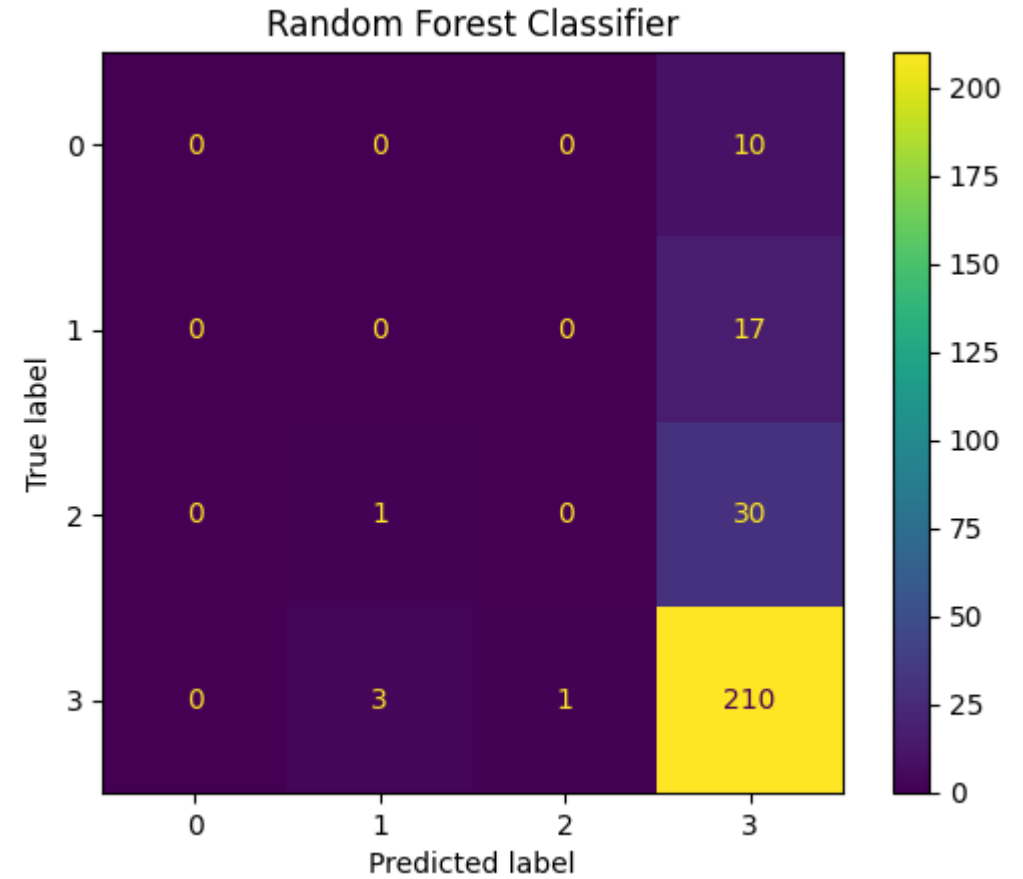
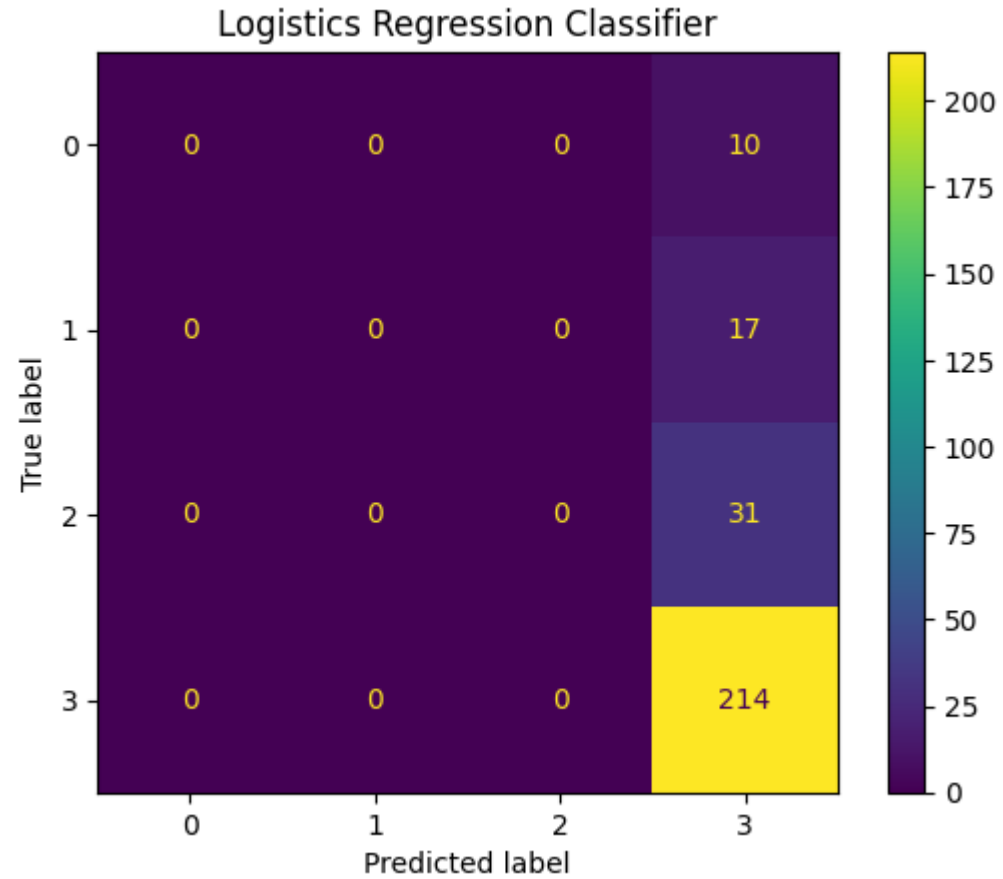


Results

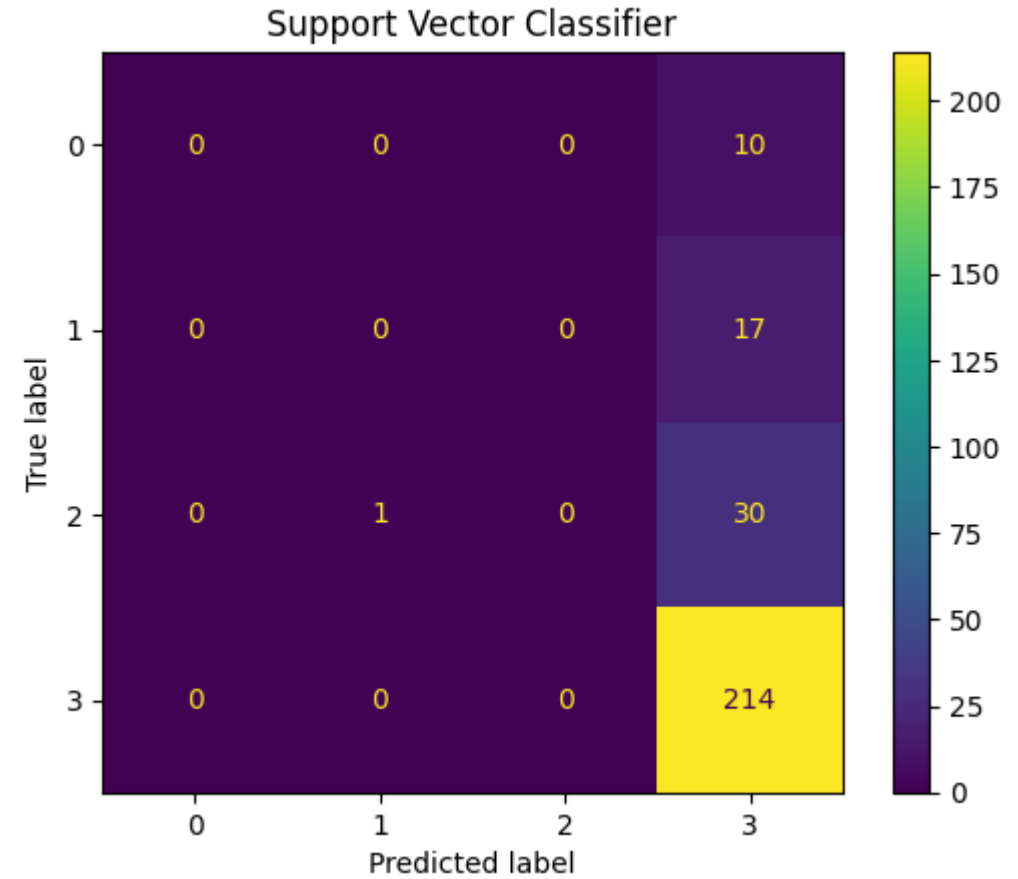
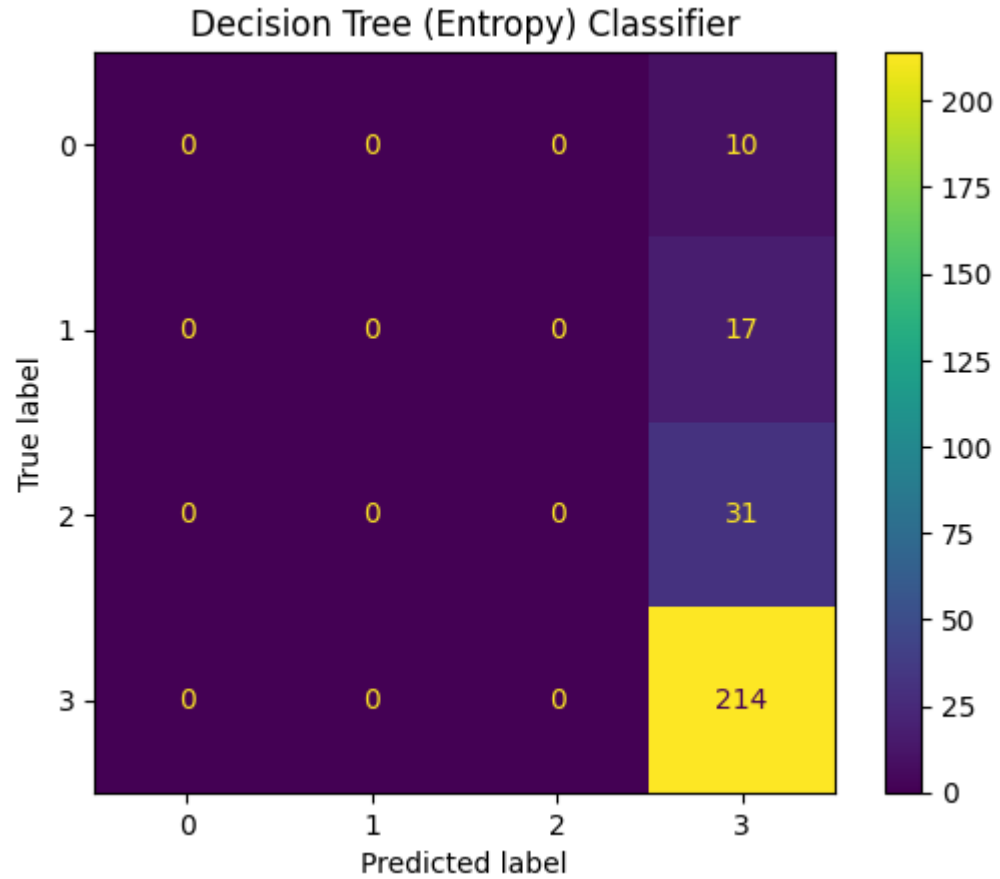
Classifier Model	Accuracy	Macro F1	Weighted F1
Logistic Regression	0.79	0.22	0.69
Random Forest	0.77	0.22	0.69
Support Vector	0.79	0.22	0.69
Decision Tree	0.79	0.22	0.69
Neural Network	0.79	0.22	0.69

Fig: Metrics of models' performance

Results



Results



Contributions

Contributions

- **Bangla Food Review in Social Media Dataset**

905 posts, 26004 lines of comments

- **Findings**

- Most of the Bangla Food Review (2020-22) sentiments are positive

- **Tools**

- Chrome Free Plugin for Scraping Facebook Comments

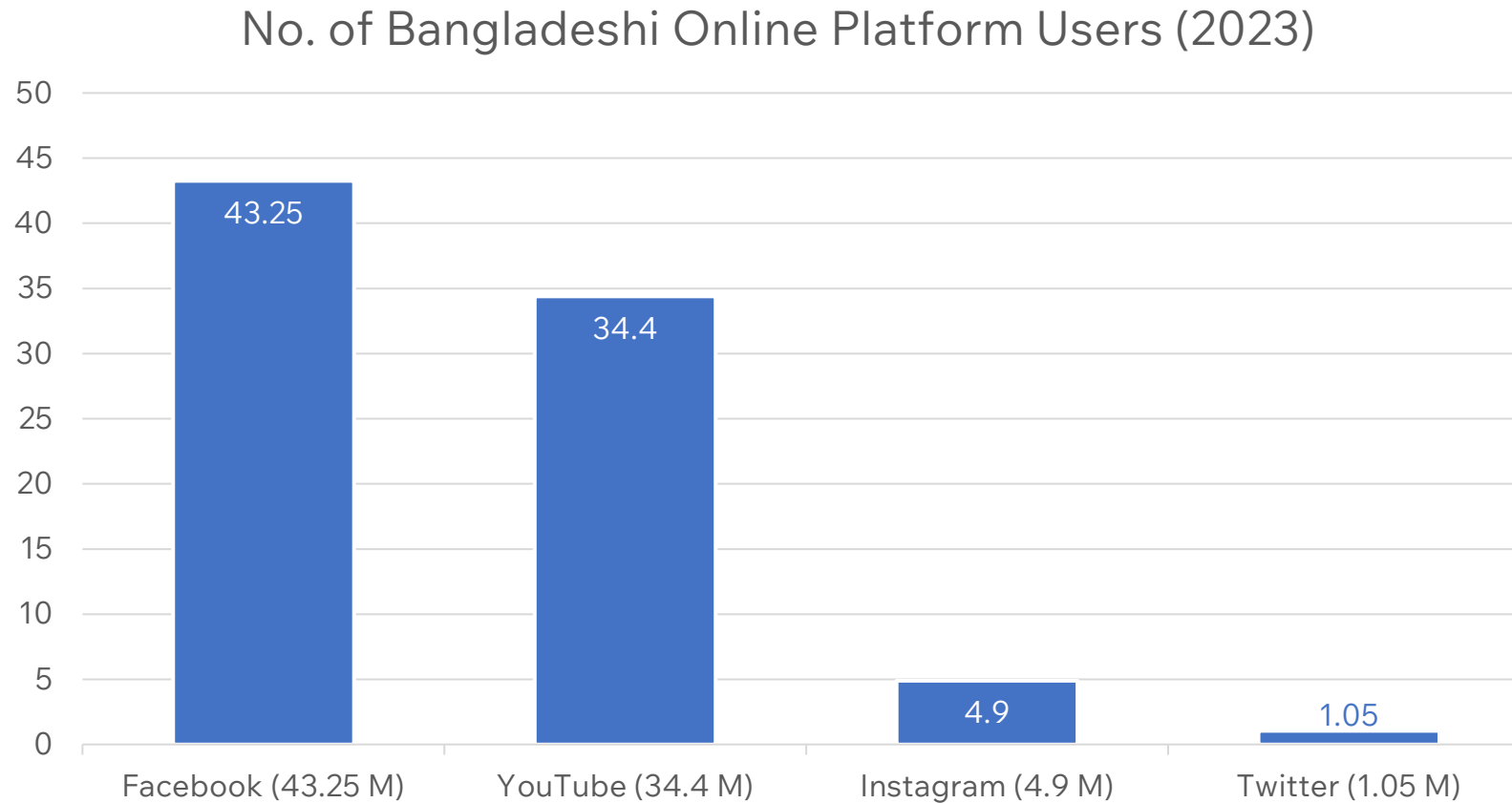
Future Work

- **Bangla Food Review in Social Media Groups**
 - Might lead to more balanced datapoints

Thank you

Appendix

Motivation



Methodology

Correlation Coefficient of All Features

Strong correlation between-

- Love & Care
- Haha & Angry

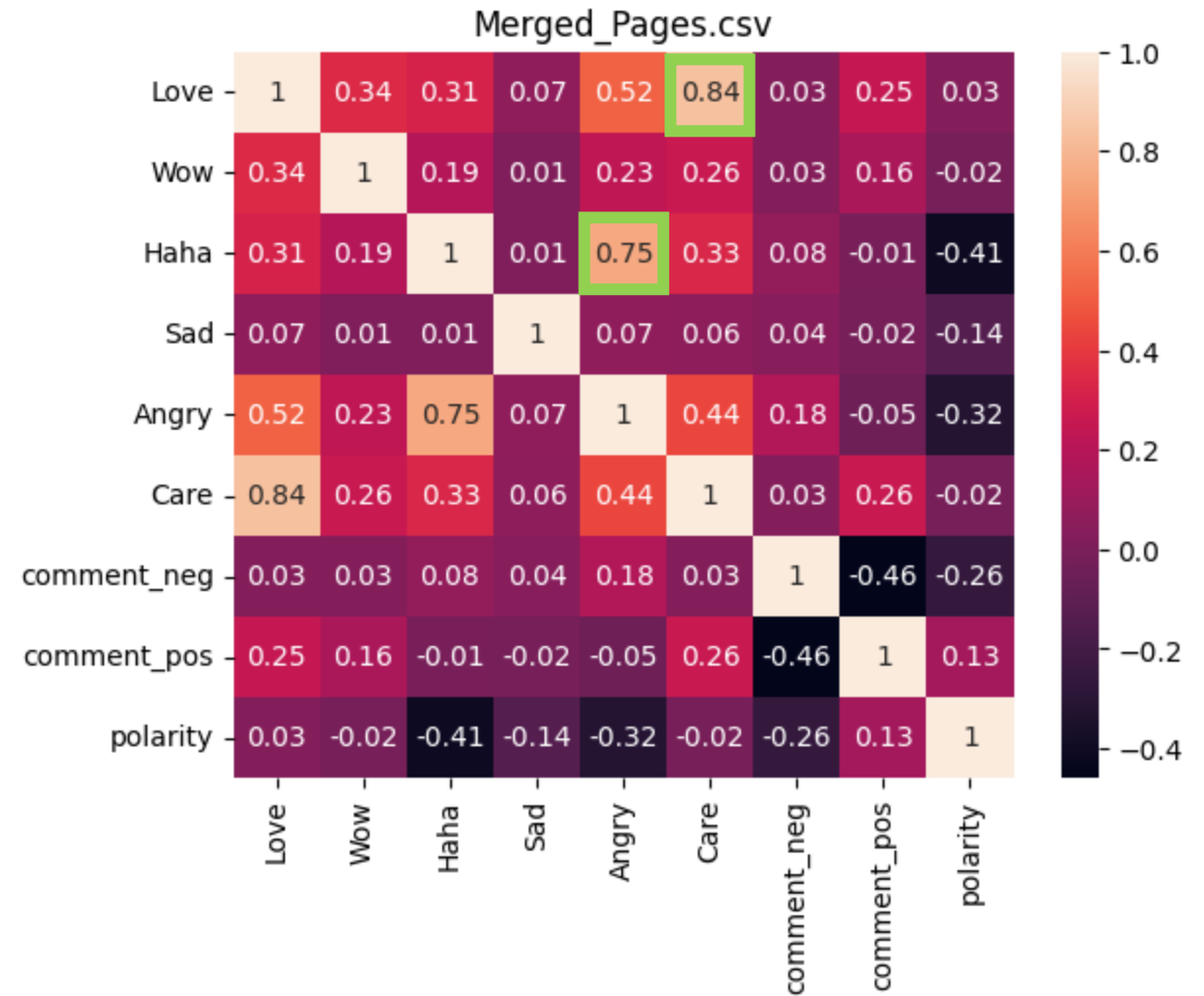


Fig: Correlation co-efficient of features of all datapoints

BanglaBERT Score

- Evaluation Results of BanglaBERT

banglabert > classification > outputs > train_2_output > {} eval_results.json > ...

```
1  {
2      "epoch"          : 6.0,
3      "eval_accuracy"  : 0.7440970006381621,
4      "eval_f1"        : 0.6995557513694072,
5      "eval_loss"      : 0.6402221918106079,
6      "eval_precision" : 0.7128374207685689,
7      "eval_recall"    : 0.6984130006982796,
8      "eval_runtime"   : 119.2882,
9      "eval_samples"   : 1567,
10     "eval_samples_per_second" : 13.136,
11     "eval_steps_per_second"   : 0.822
12 }
```

BanglaBERT Score

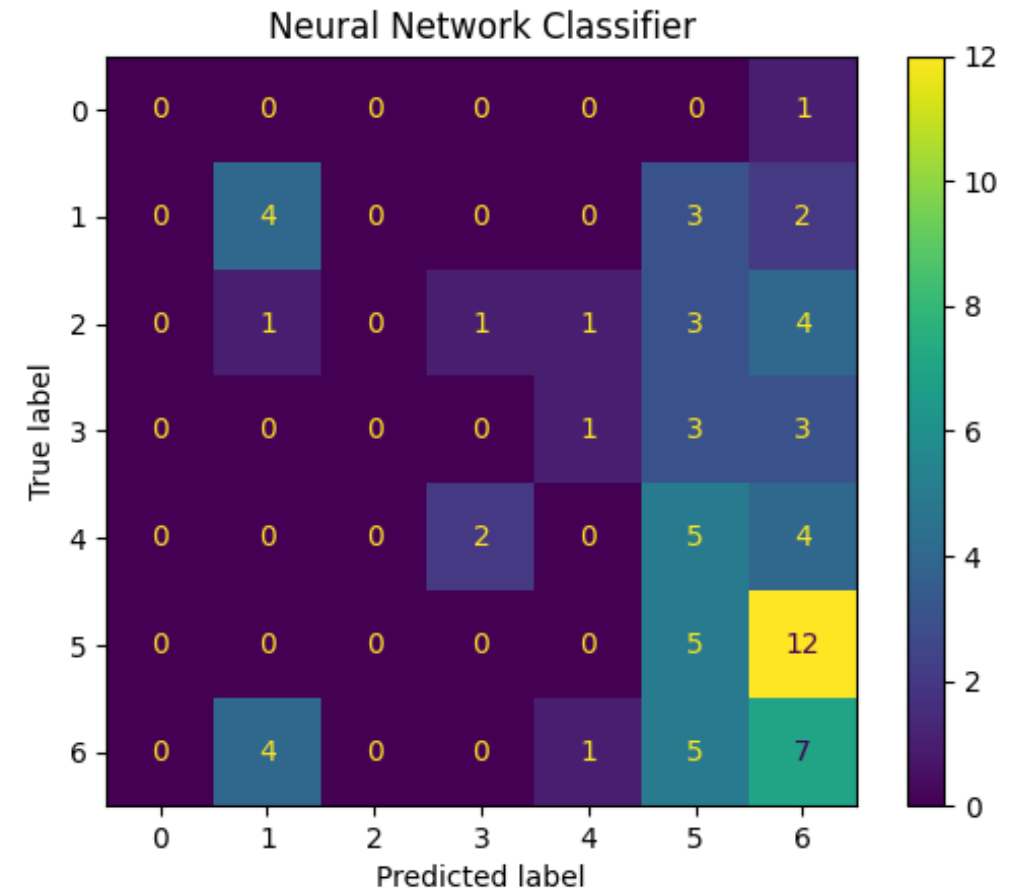
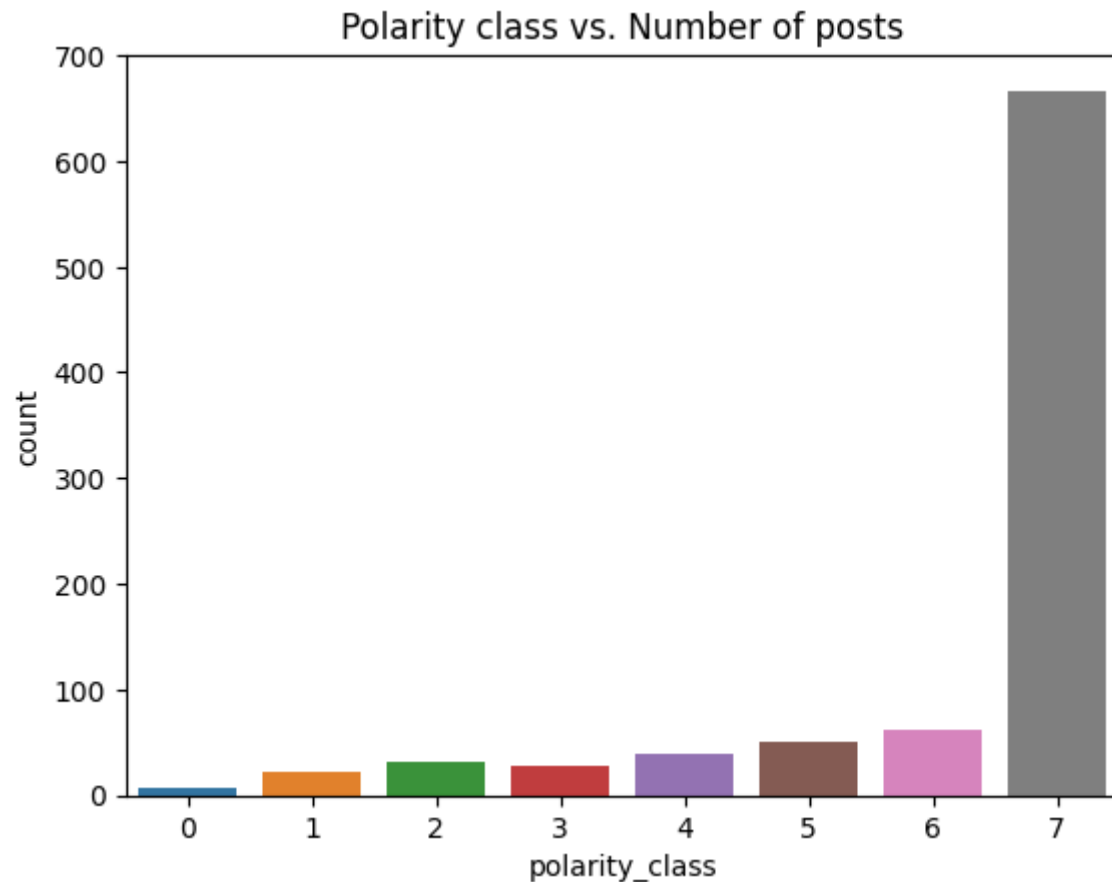
- Evaluation Results of BanglaBERT

banglabert > classification > outputs > train_2_output > {} all_results.json > ...

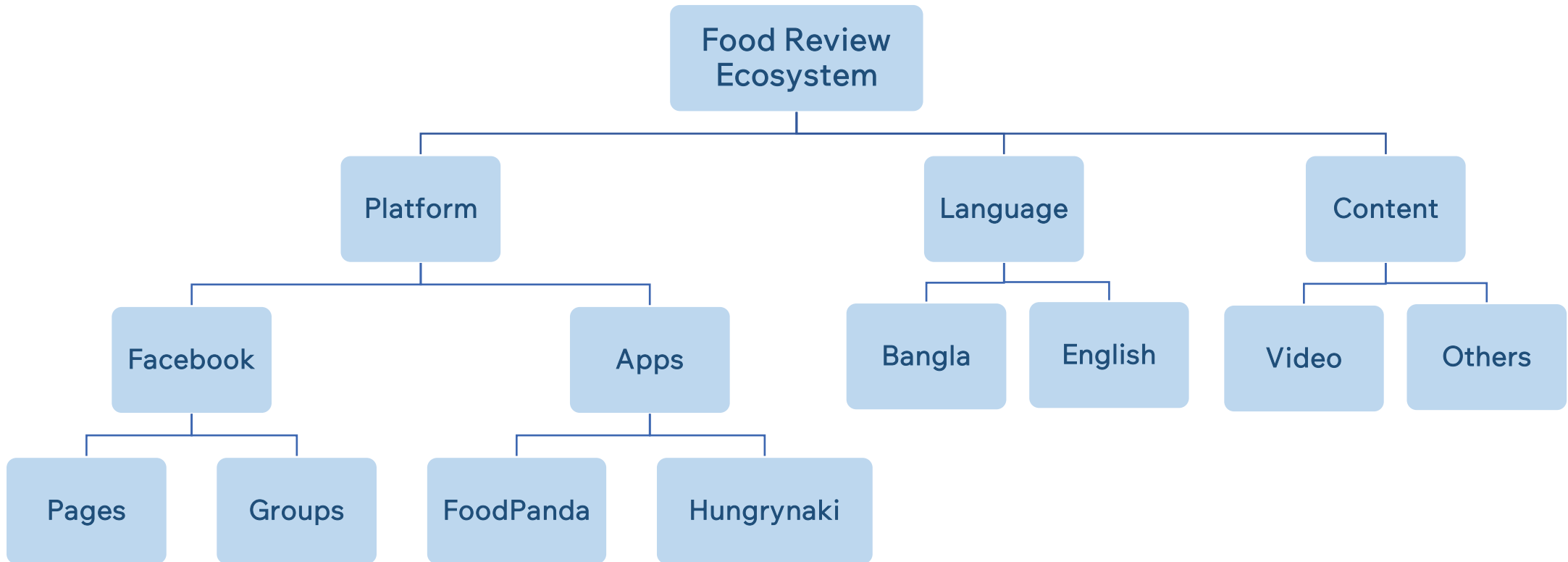
```
1  {
2      "epoch": 6.0,
3      "predict_accuracy": 0.8376068376068376,
4      "predict_f1": 0.8375593715747169,
5      "predict_loss": 0.4159718453884125,
6      "predict_precision": 0.8377192982456141,
7      "predict_recall": 0.8375219170075978,
8      "predict_runtime": 0.0544,
9      "predict_samples_per_second": 18.394,
10     "predict_steps_per_second": 18.394,
11     "train_loss": 0.7038717358874709,
12     "train_runtime": 9918.008,
13     "train_samples": 12575,
14     "train_samples_per_second": 3.804,
15     "train_steps_per_second": 0.119
16 }
```

Neural Network w/o class 7

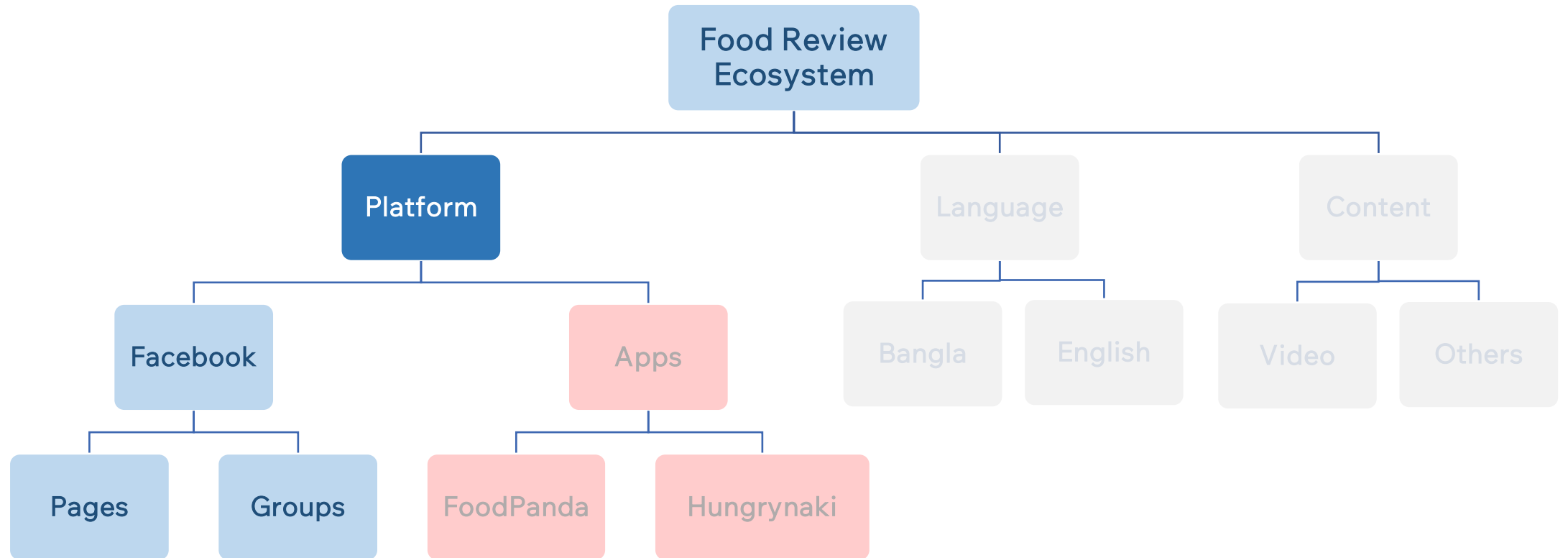
- Confusion Matrix of Neural Network w/o class 7 data, Epoch = 200



Problem



Problem



Problem

