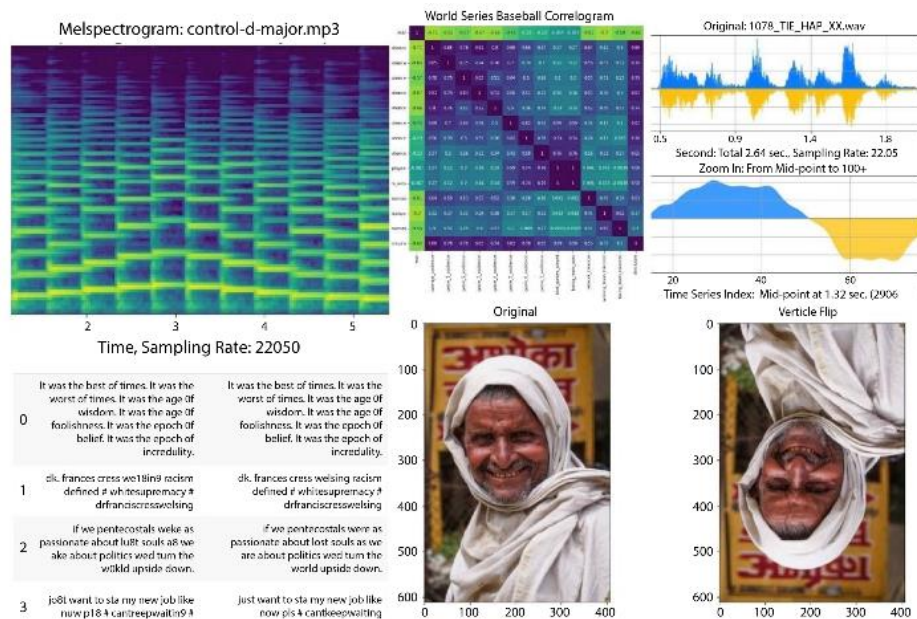


Chapter 1: Data Augmentation Made Easy



Examples	Recent	Google Drive	GitHub	Upload
Enter a GitHub URL or search by organization or user <input checked="" type="checkbox"/> Include private repos				
PacktPublishing/Data-Augmentation-with-Python <input type="text" value=""/>				
Repository: 🔗				
PacktPublishing/Data-Augmentation-with-Python				
Path				
.ipynb_checkpoints/data_augmentation_with_python_cha... <input type="text" value=""/>				



ExamplesRecentGoogle DriveGitHubUpload

Choose FileNo file chosen

File Edit View Run Kernel Git Tabs Settings Help

Filter files by name

Name	Last Modified
2021-code	a year ago
2021-doc	a year ago
2021-image	a year ago
2021-misc	3 months ago
2021-movie	a year ago
2021-zip-app	a year ago
2022-doc	a year ago
2022-image	a month ago
2022-premise	2 days ago
2022-time-series-b...	10 months ago
2023-image	7 days ago
article4	18 hours ago
book1-img	5 days ago
Data-augmentation...	a month ago
GitHub	7 months ago
img5	17 hours ago
Playgrounds	a year ago

Untitled.ipynb

Jupyter Notebook on MacBook

[7]:

```
import math  
print("Hello earthling: The secrete to the universe is: ", math.floor(13.3790 * math.pi))
```


Hello earthling: The secrete to the universe is: 42

Simple 0 1 Python 3 (ipykernel) | Idle

Mode: Command Ln 1, Col 12 Untitled.ipynb

Copy to GitHub

Repository: [🔗](#)
duchaba/Data-Augmentation-with-Python

Branch: [🔗](#)
main

File path
data_augmentation_with_python_chapter_7.ipynb

Commit message
Created using Colaboratory

☒ Include a link to Colaboratory

CancelOK

Chapter 2: Biases in Data Augmentation



API

Using Kaggle's beta API, you can interact with Competitions and Datasets to download data, make submissions, and more via the command line. [Read the docs](#)

Create New API Token

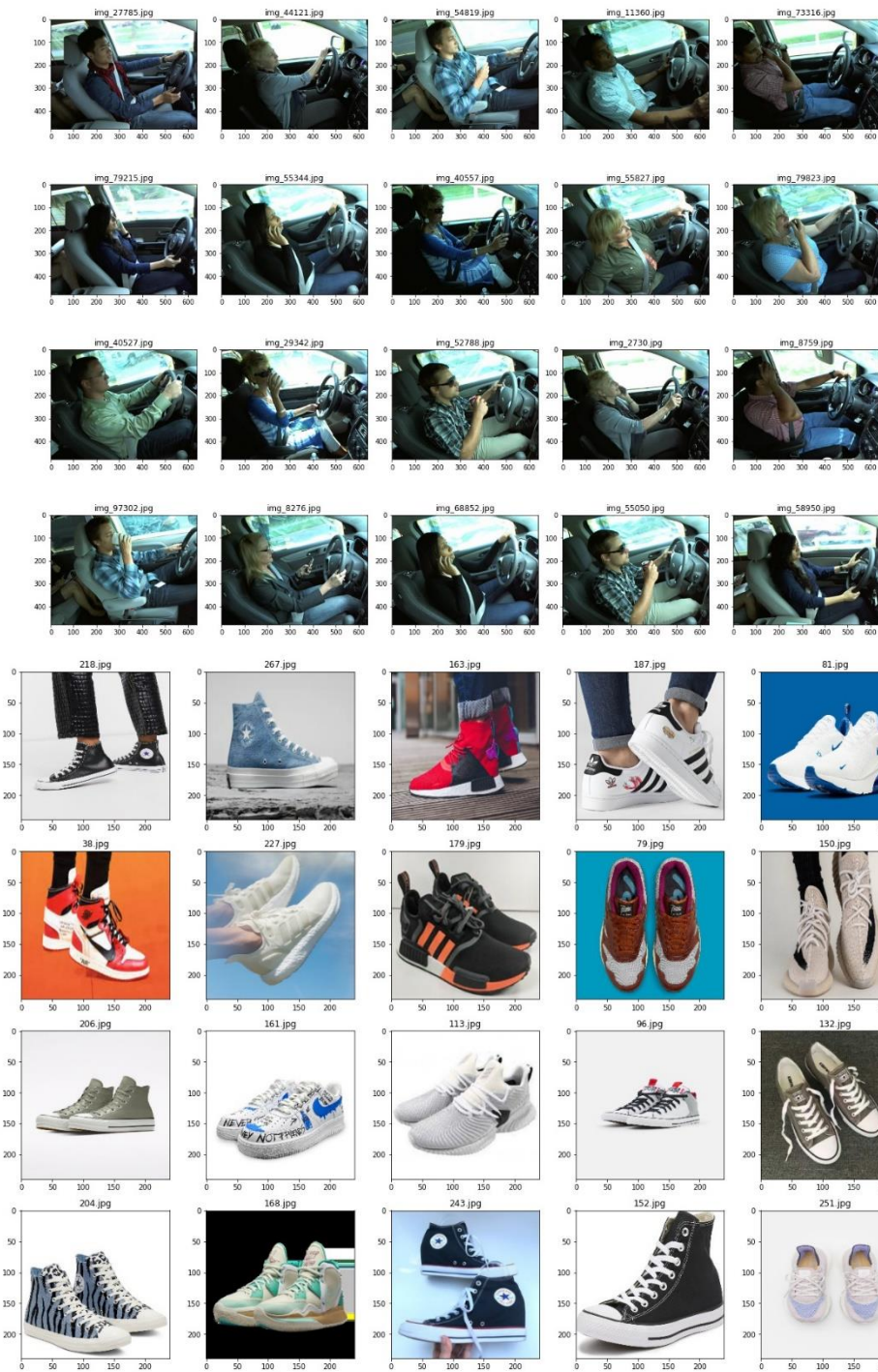
Expire API Token

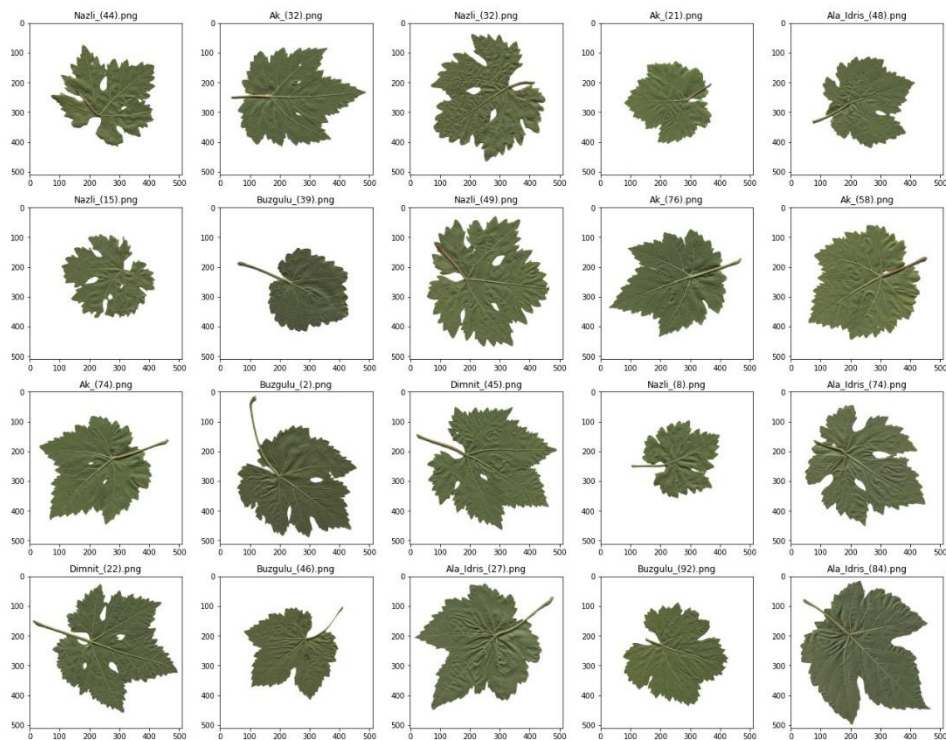


	subject	classname	img
22421	p081	c9	img_25946.jpg
22422	p081	c9	img_67850.jpg
22423	p081	c9	img_9684.jpg

	subject	classname	img	fname
0	p002	c0	img_44733.jpg	state-farm-distracted-driver-detection/imgs/train/c0/img_44733.jpg
1	p002	c0	img_72999.jpg	state-farm-distracted-driver-detection/imgs/train/c0/img_72999.jpg
2	p002	c0	img_25094.jpg	state-farm-distracted-driver-detection/imgs/train/c0/img_25094.jpg





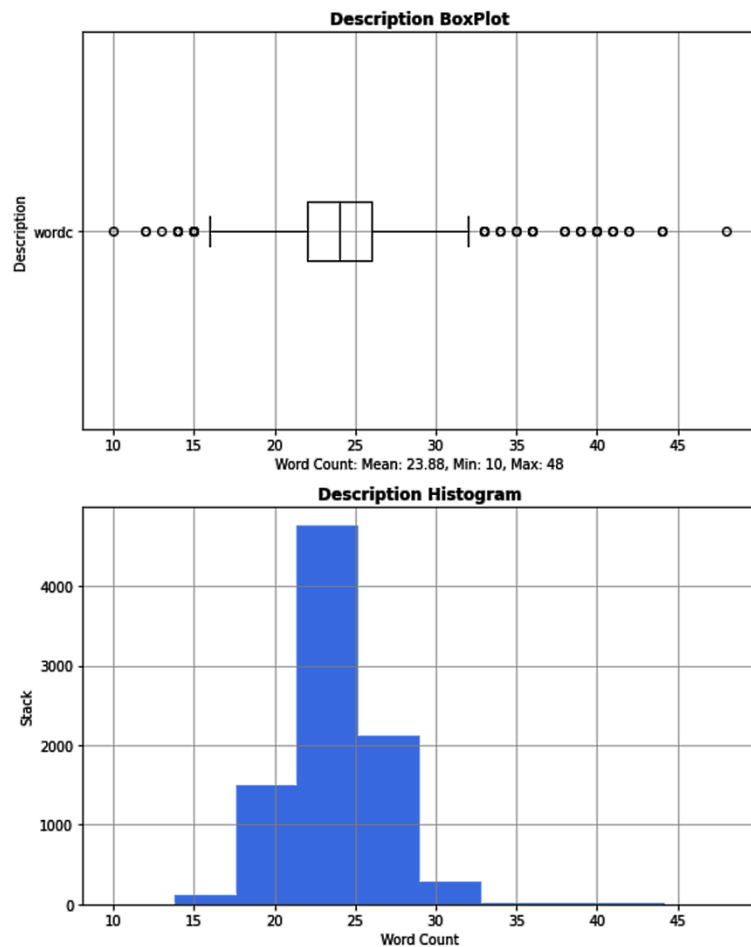


show_id type title director cast

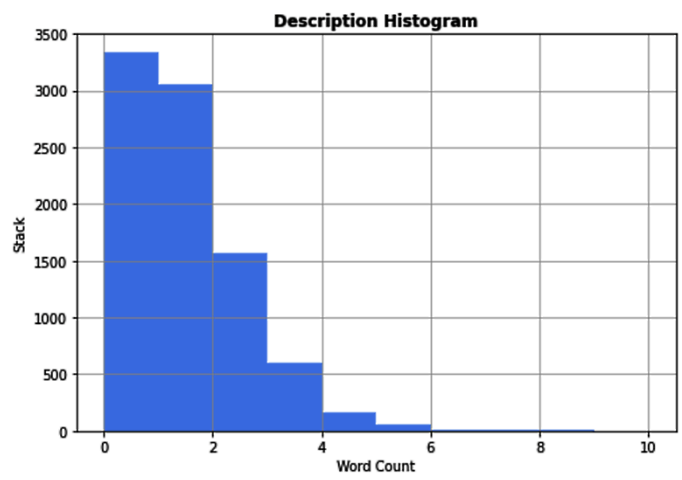
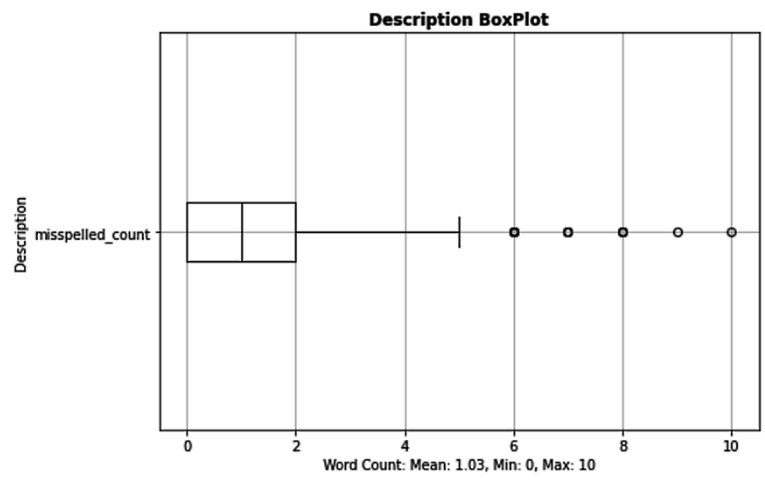
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	nan
1	s2	TV Show	Blood & Water	nan	Ama Qamata, Khosi Ngema, Gail Mabalane, Thabang Molaba, Dillon Windvogel, Natasha Thahane, Arno Greeff, Xolile Tshabalala, Getmore Sithole, Cindy Mahlangu, Ryle De Morny, Greteli Fincham, Sello Maake Ka-Ncube, Odwa Gwanya, Mekaila Mathys, Sandi Schultz, Duane Williams, Shamilla Miller, Patrick Mofokeng
2	s3	TV Show	Ganglands	Julien Leclercq	Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabiha Akkari, Sofia Lesaffre, Salim Kechiouche, Nouredine Farihi, Geert Van Rampelberg, Bakary Diombera

	title	description
5342	Alan Saldaña: Mi vida de pobre	Mexican comic Alan Saldaña has fun with everything from the pressure of sitting in an exit row to maxing out his credit card in this stand-up special.
6991	Honey: Rise Up and Dance	Despite discouragement from her loved ones, a talented street dancer tries out for an exclusive dance crew in a bid to win a college scholarship.
5023	Derren Brown: The Push	Mentalist Derren Brown engineers an audacious social experiment demonstrating how manipulation can lead an ordinary person to commit an appalling act.
2143	Rob Schneider: Asian Momma, Mexican Kids	Former "Saturday Night Live" star Rob Schneider returns to the stage and shares his take on life, love and dinosaur dreams in this stand-up special.
7182	Khaani	After a rich politician's son kills a young woman's brother, an unlikely romantic connection complicates her pursuit of justice.
280	Bake Squad	Expert bakers elevate desserts with next-level ideas and epic execution. Now the battle is on to win over clients in need of very special sweets.

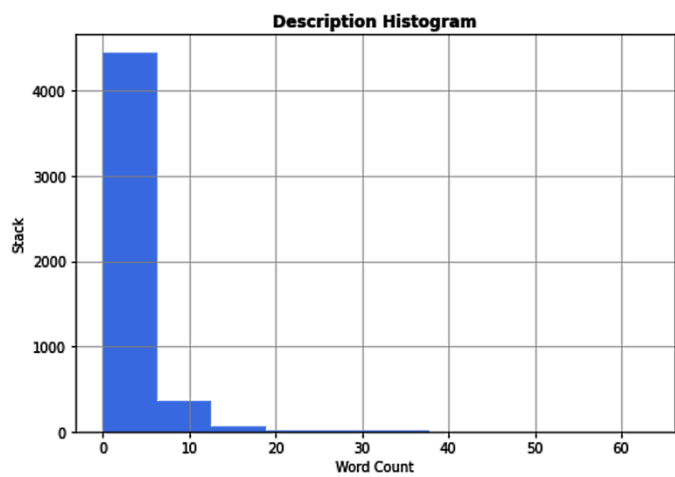
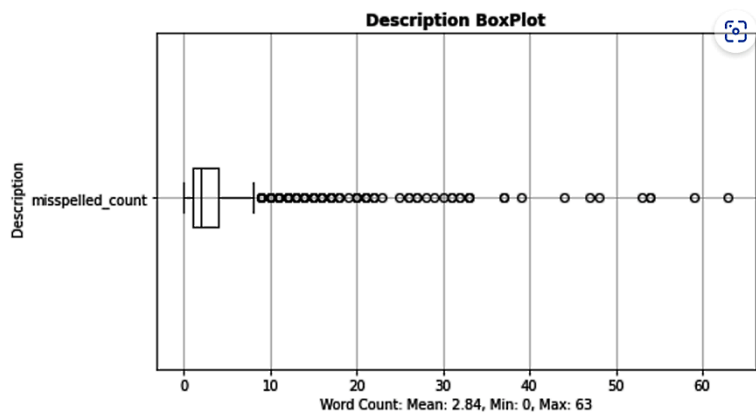
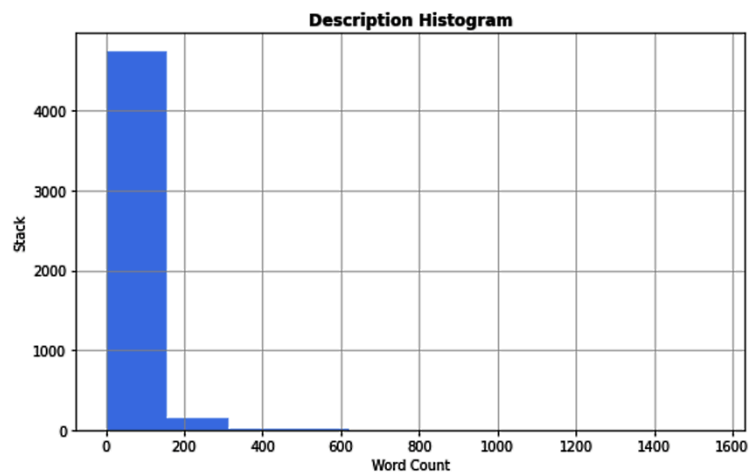
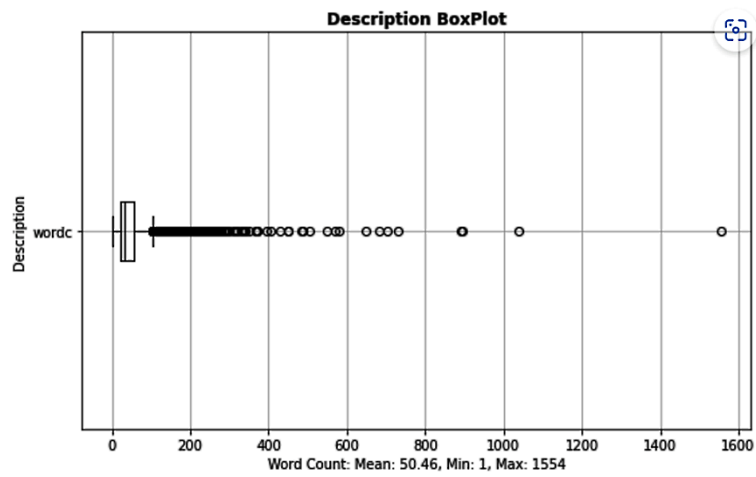
	description	wordc
6954	When best friends break a blood oath, one of them is cast away to hell, and the other two must save him from the misfits of the underworld.	28
4619	In the grim Alaskan winter, a naturalist hunts for wolves blamed for killing a local boy, but he soon finds himself swept into a chilling mystery.	26
4832	Do-gooding True and Bartleby will go anywhere to make wishes come true — from the bottom of the Living Sea to the tip of Mount Tippy Tippy Top!	28
3958	Decades ago, a hero from the stars left this world in peace. Now, the son of Ultraman must rise to protect the Earth from a new alien threat.	28
7344	Sparks fly and romance blooms when Shelby, a vegan chef, meets Greg, a developer — until their opposing views clash.	20
5058	In this musical comedy, two rebellious teen girls who love electronic music have a life-changing brush with the divine at a camp run by nuns.	25



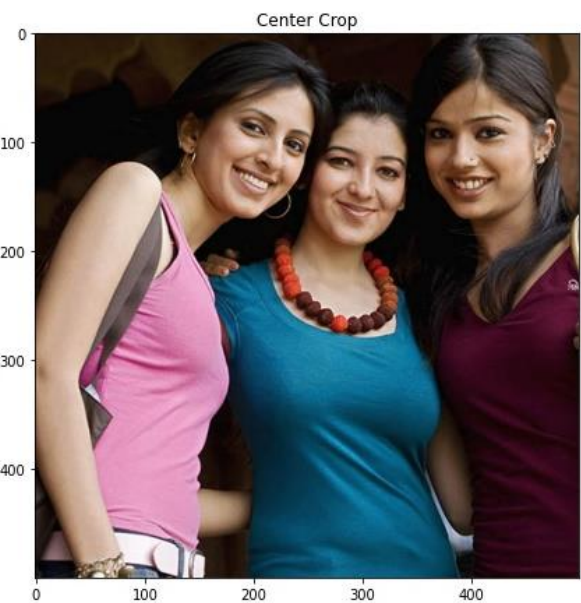
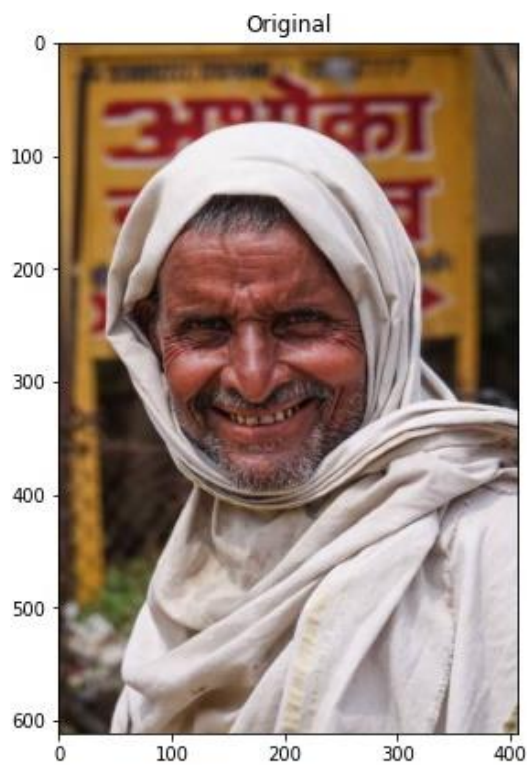
	description	misspelled
884	Finding life in all thatâ€s left behind, a detail-oriented trauma cleaner and his estranged uncle deliver untold stories of the departed to loved ones.	{'thatâs', 'detailoriented'}
8301	Following a friend's suicide after her husband dumps her for a younger model, three women plot payback against their two-timing exes.	{'twotiming'}
3571	Elite street racers from around the world test their limits in supercharged custom cars on the biggest, baddest automotive obstacle course ever built.	set()
8758	From Moscow to Mexico City, three BBC journalists delve into the inner workings of some of the most burgeoning metropolises on Earth.	{'bbc', 'metropolises'}
7143	Juana InÃ©s de la Cruz, a powerful feminist nun involved in a forbidden love affair with a woman, faces oppression in 17th-century Mexico.	{'inÃ©s', '17thcentury', 'juana'}
5534	A famous designer who's always pretended to be gay finds himself in crisis mode when threatened with exposure as the woman-chasing straight guy he is.	{'womanchasing'}

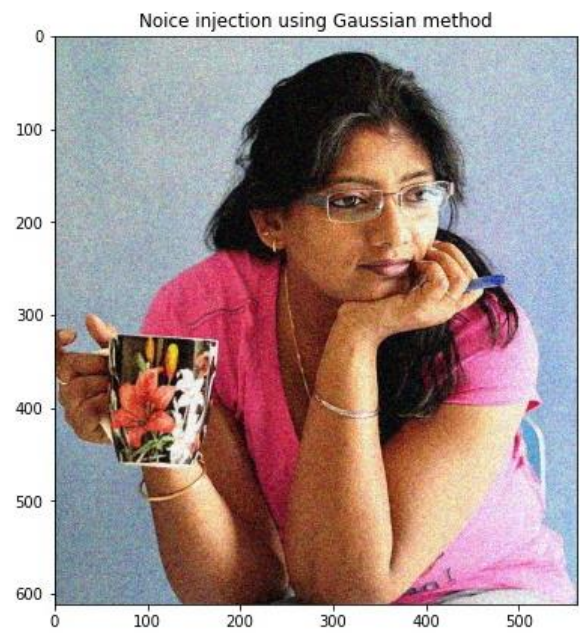
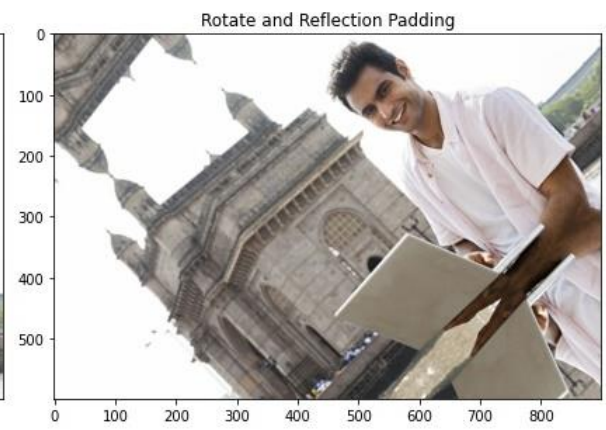
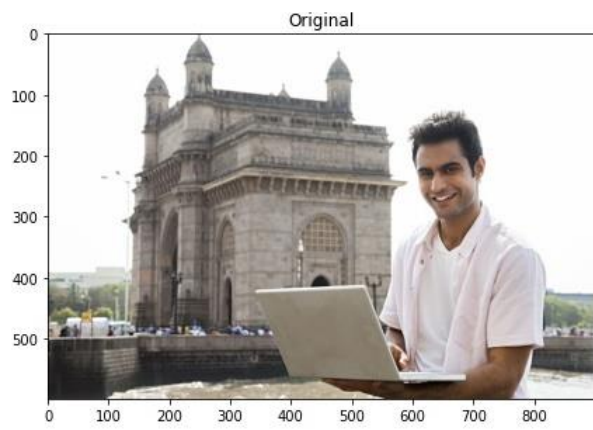
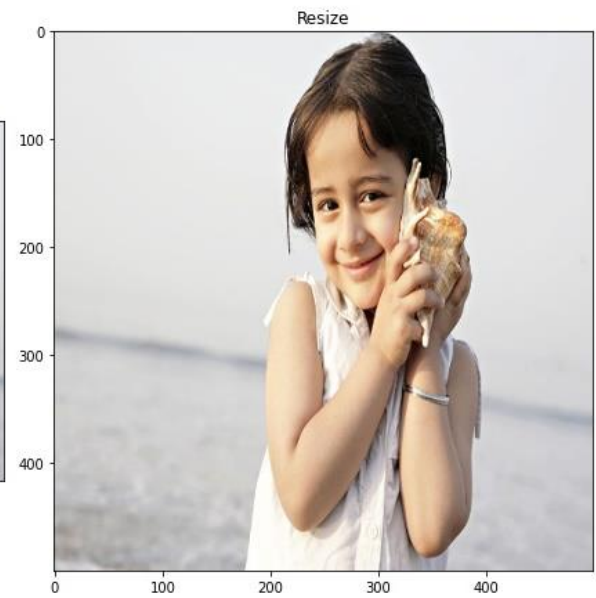
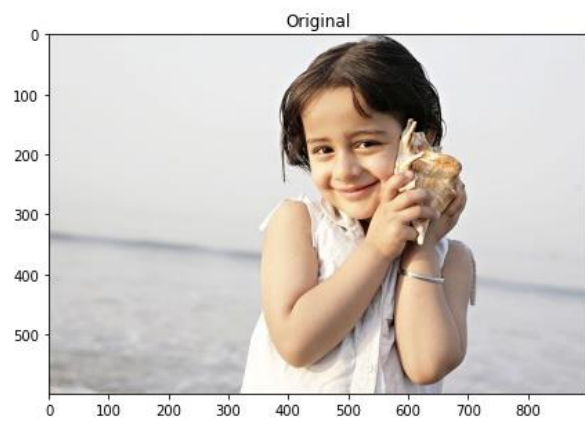


	reviewText	misspelled
4887	I got this for my Samsung Galaxy S5 and could not be happier. It's fast enough with the still and video camera on the phone.I have had no problems transferring files of all types from my pc or tablets. At this price it is a great buy.	{ 's5', 'pc', 'samsung', 'phonei' }
4732	Great speed on both my DSLR and Smartphones. Great Sandisk quality as usual.Although other brands may be cheaper at times, I normally look to Sandisk first, and will usually buy it over other brands unless there is a large price difference.	{ 'dslr', 'sandisk', 'usualalthough' }
2385	im so upset right now it just died , turned on my phone and all my movies pics music all gone. card just died after three months bullcrap.	set()
2724	Works perfectly in my gopro black edition and offers a lot of space, very happy overall. would recommend to friends.	{ 'gopro' }
3393	Never had any issues with sandisk adapter card or devices. They work great and this one is no exception. Very small media for my big fingers but I manage. to do what I need to with it and it works well. Last thing is that Amazon's prices are hard to beat!	{ 'sandisk' }
985	If you carry two of these, one in your camera and one in the camera case pocket (don't lose it), you will never run out of memory. Enough capacity at ~4MB/image to shoot and shoot and shoot. Download at the end of the day if you want, but you have thousands of pictures on one of these. Couple with batteries (see WASABI review) and you can just never stop shooting.	{ '4mbimage' }



Chapter 3: Image Augmentation for Classification

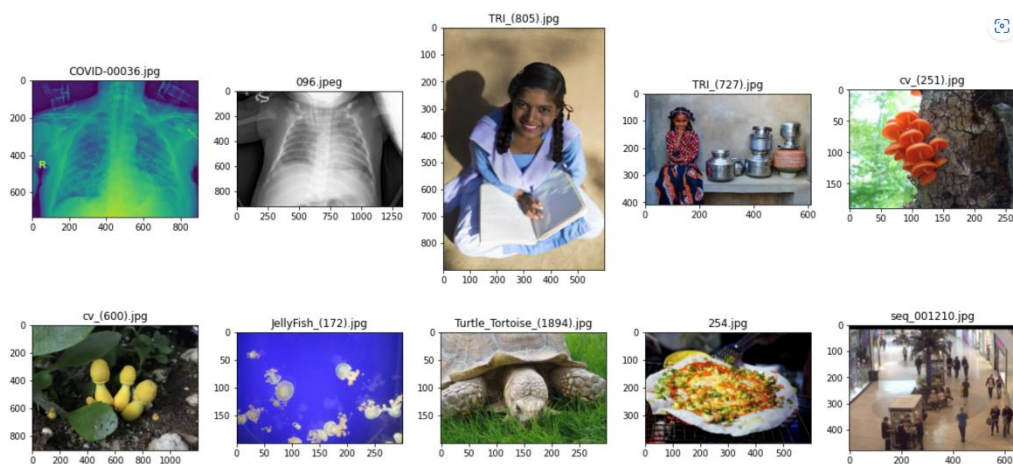






fname label

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1	kaggle/covid19-image-dataset/Covid19-dataset/t...	Covid
2	kaggle/covid19-image-dataset/Covid19-dataset/t...	Covid





Indian



Indian



Indian



Indian



Indian



Indian



Indian



Indian



Indian



Indian



Indian



Indian



Indian

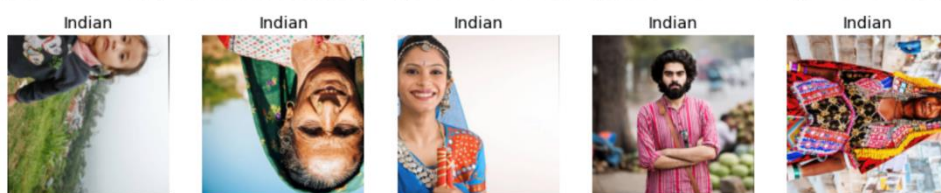
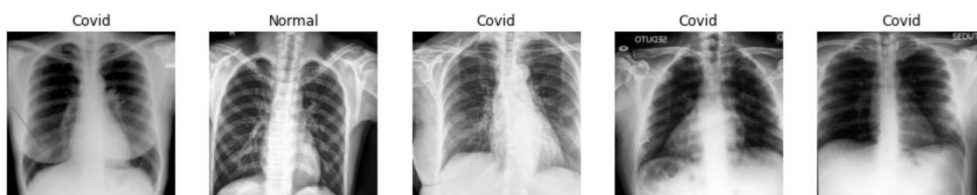
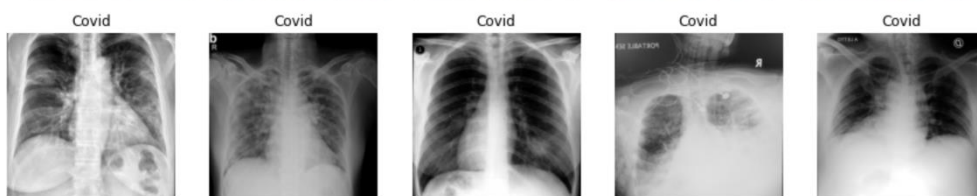


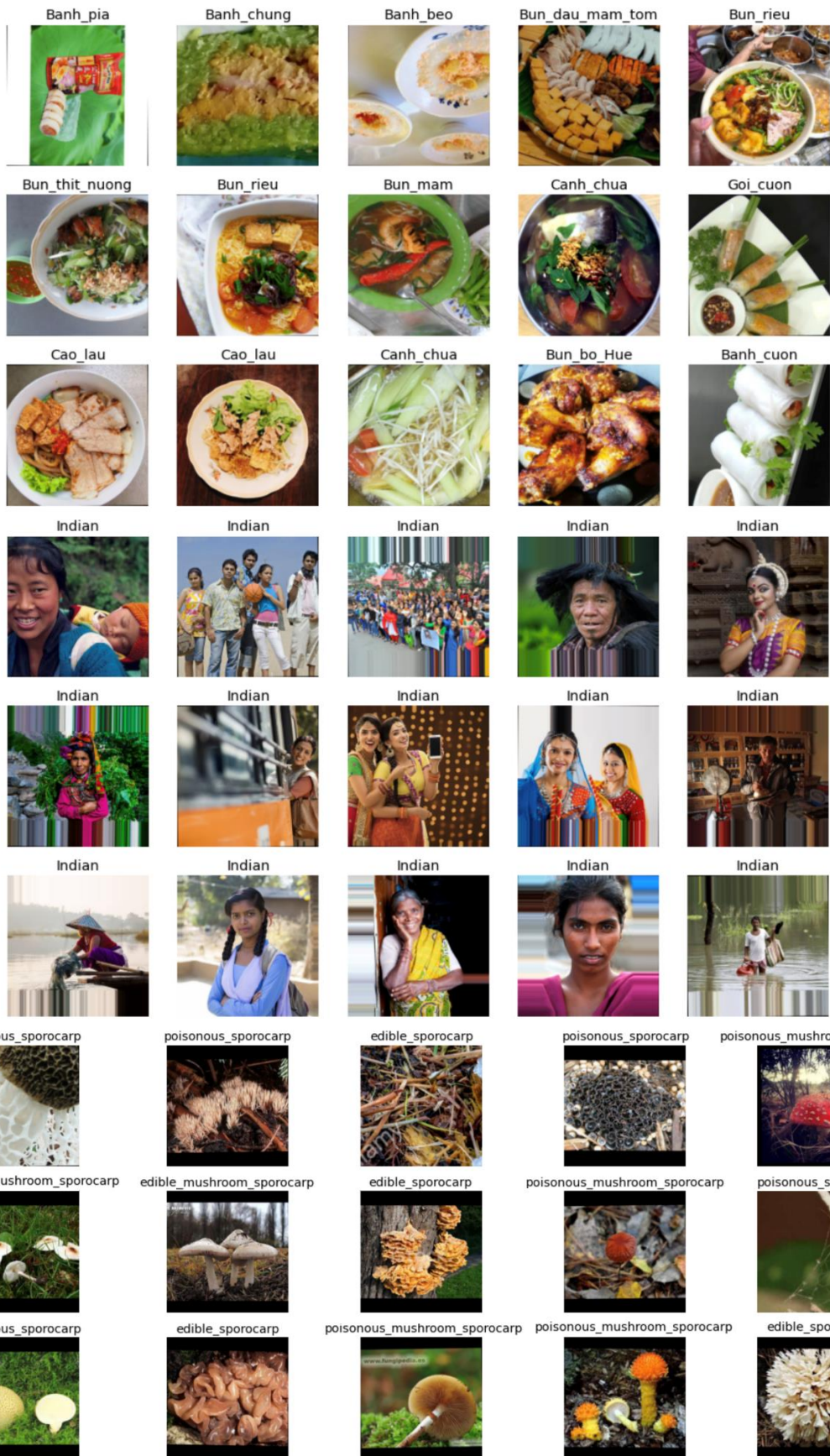
Indian



Indian







Goi_cuon



Banh_beo



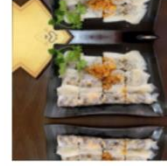
Cao_lau



Ca_kho_to



Banh_cuon



Banh_tet



Banh_canh



Banh_mi



Banh_xeo



Banh_tet



Cao_lau



Pho



Banh_mi



Banh_duc



Banh_bot_loc



Crabs



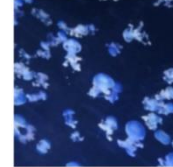
Puffers



Turtle_Tortoise



Jelly_Fish



Penguin



Jelly_Fish



Turtle_Tortoise



Nudibranchs



Turtle_Tortoise



Sea_Rays



Crabs



Turtle_Tortoise



Starfish



Crabs



Sharks



Indian



Indian



Indian



Indian



Indian



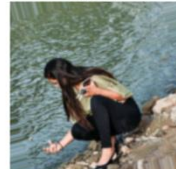
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Indian



Indian



Indian



Indian



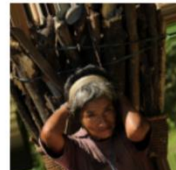
Indian



Indian



Indian

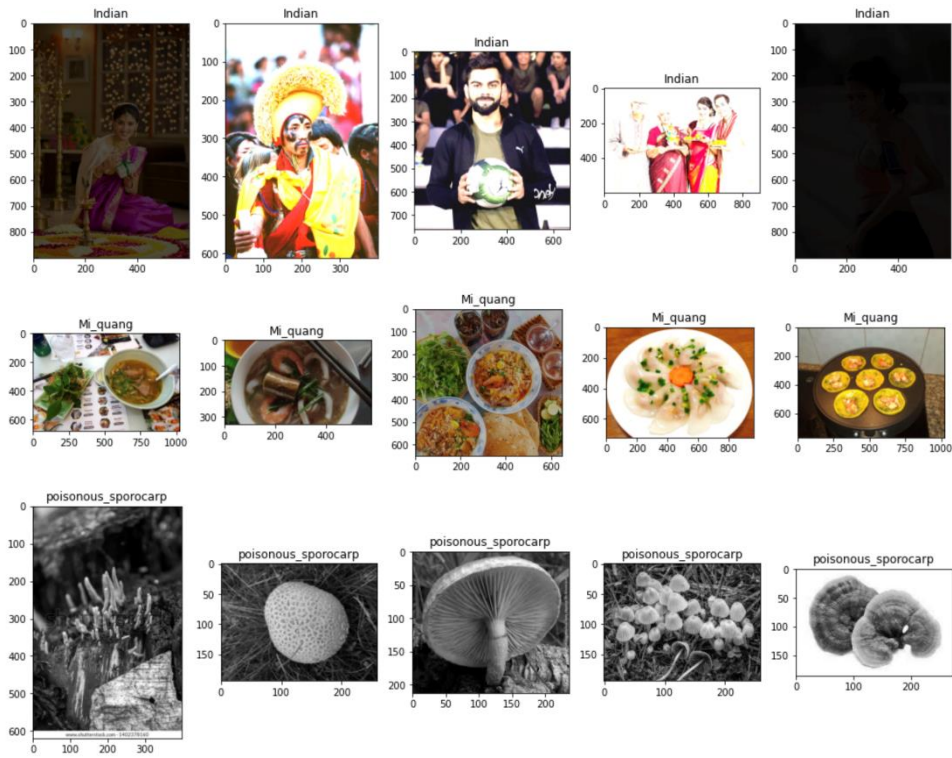


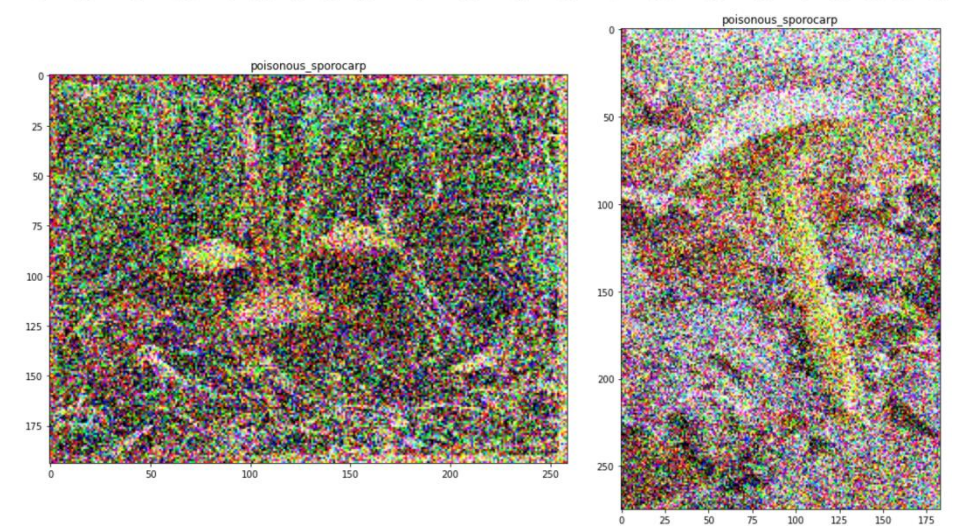
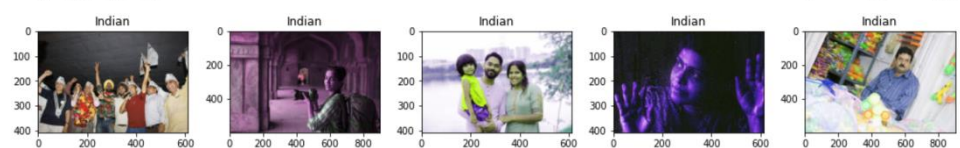
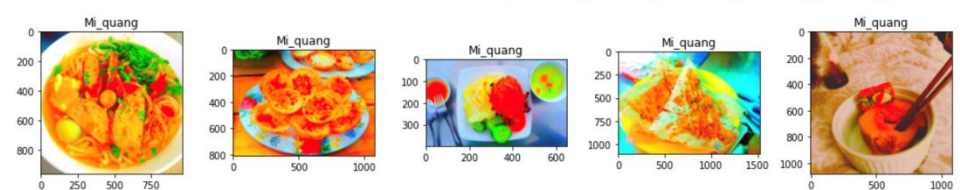
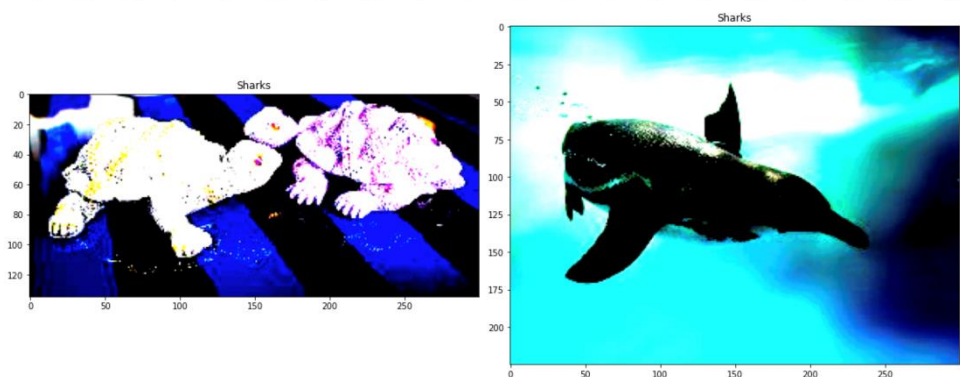
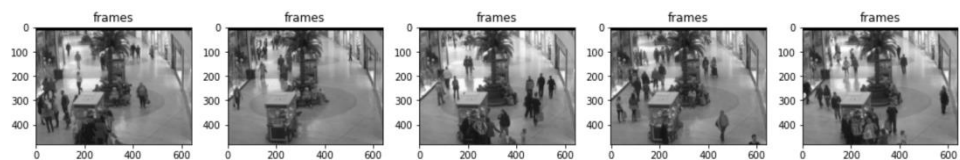
Indian

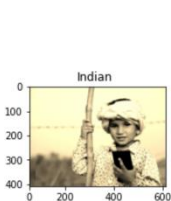
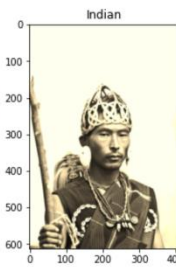
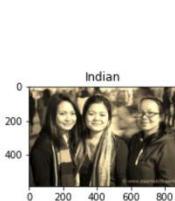
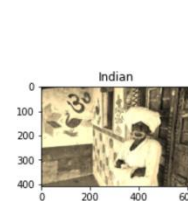


Indian

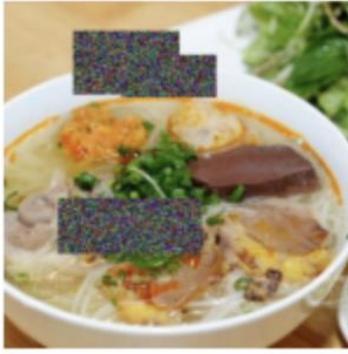




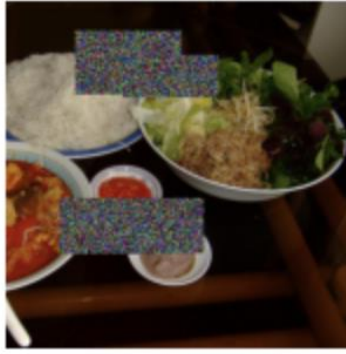




Pho



Bun_rieu



Banh_cuon



Bun_bo_Hue



Mi_quang

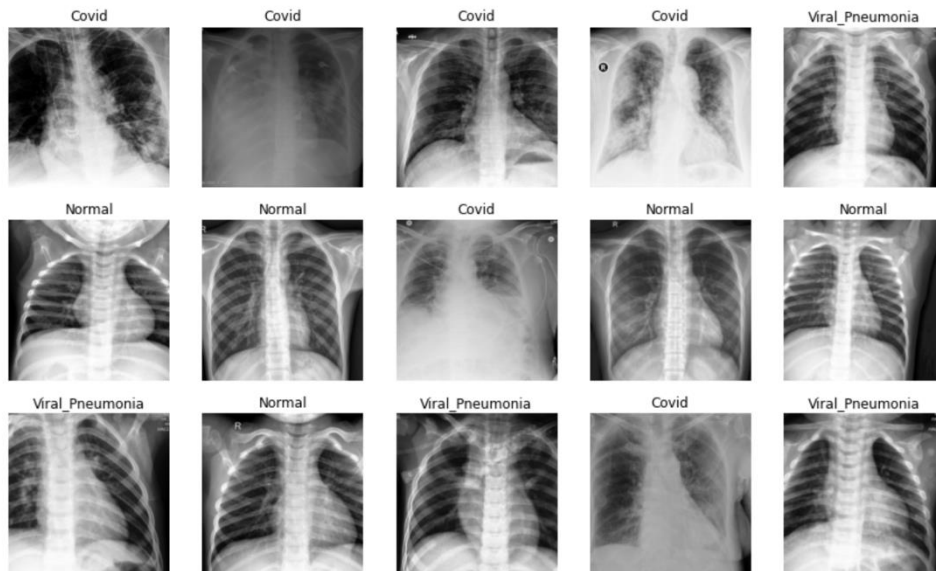


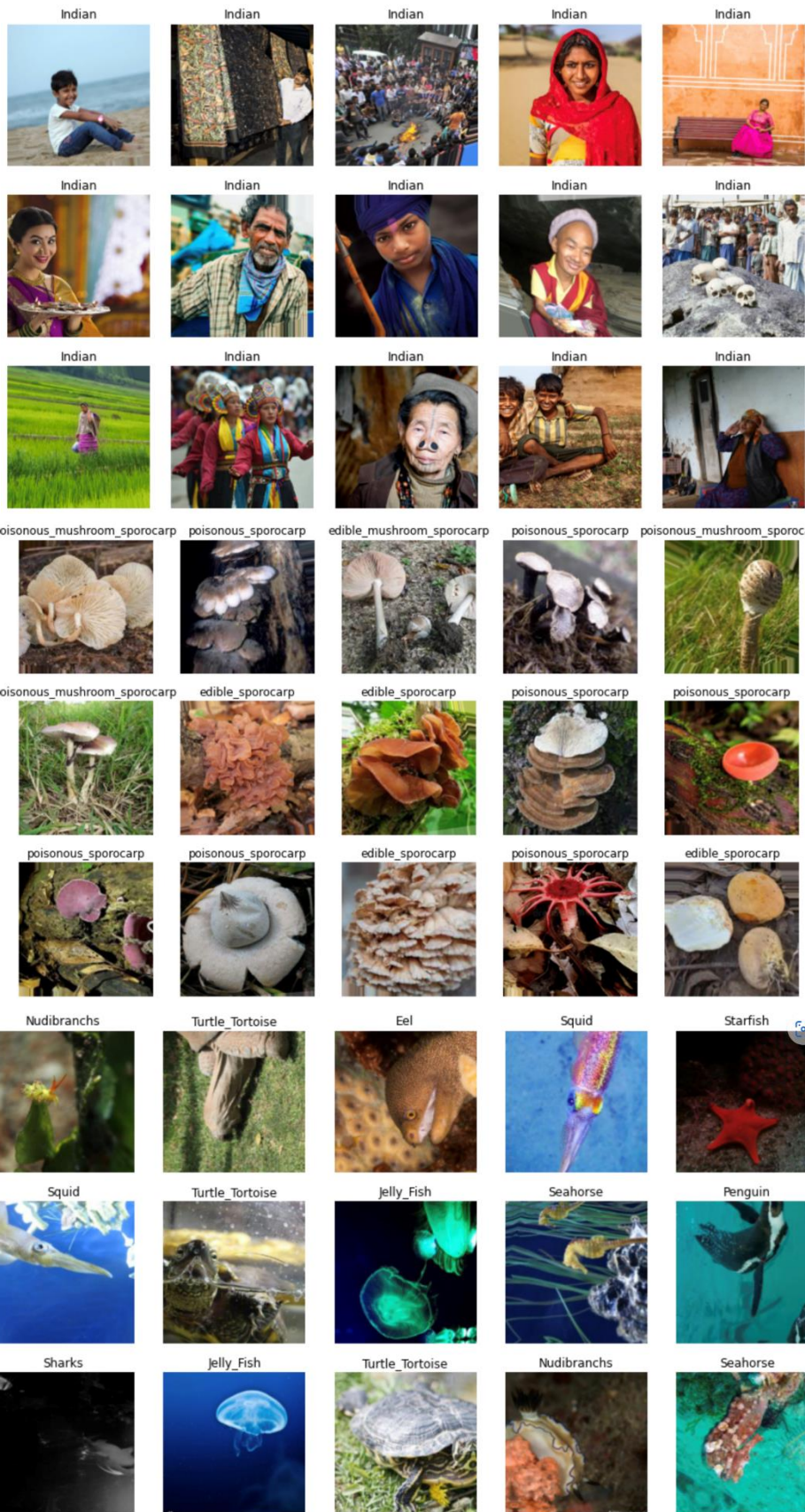
Bun_thit_nuong

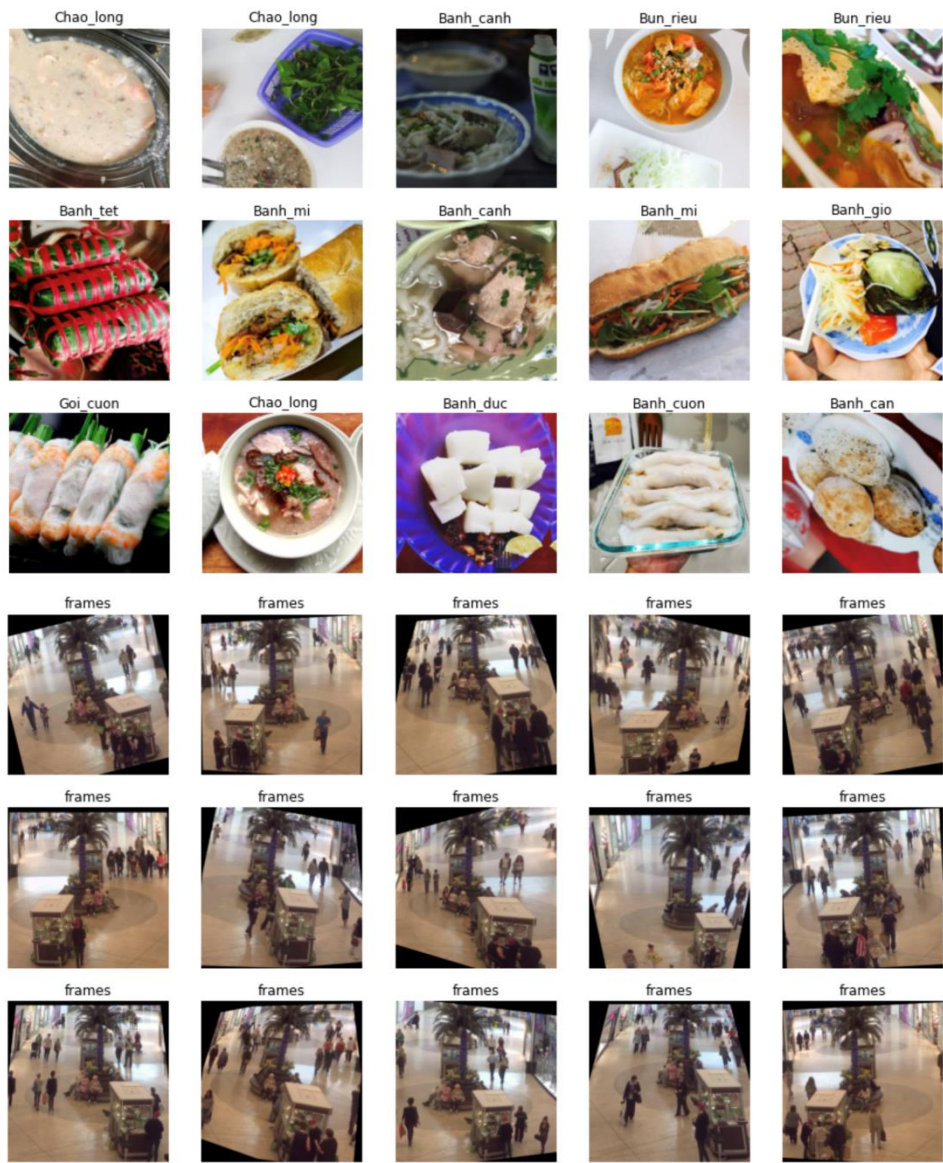


	Filter	Covid-19	People	Fungi
0	Horizontal Flip	NA	Yes	Yes
1	Vertical Flip	NA	NA	NA
2	Cropping and Padding	NA	pad=border	pad=border
3	Rotation	NA	max_rotate=25.0	max_rotate=25.0
4	Warping	NA	magnitude=0.3	magnitude=0.3
5	Lighting	brightness=0.2	brightness=0.3	brightness=0.3
6	Grayscale	NA	NA	NA
7	Contrast	contrast=0.1	contrast=0.3	contrast=0.3
8	Saturation	NA	saturation=3.5	saturation=2.0
9	Hue Shifting	NA	NA	NA
10	Noise Injection	limit=(100.0, 300.0)	limit=(300.0, 500.0)	limit=(200.0, 400.0)
11	Sun Flare	NA	NA	radius=200
12	Rain	NA	NA	length=20
13	Sepia	NA	Yes	NA
14	FancyPCA	NA	alpha=0.5	alpha=0.5
15	Random Erasing	NA	max_count=3	max_count=3

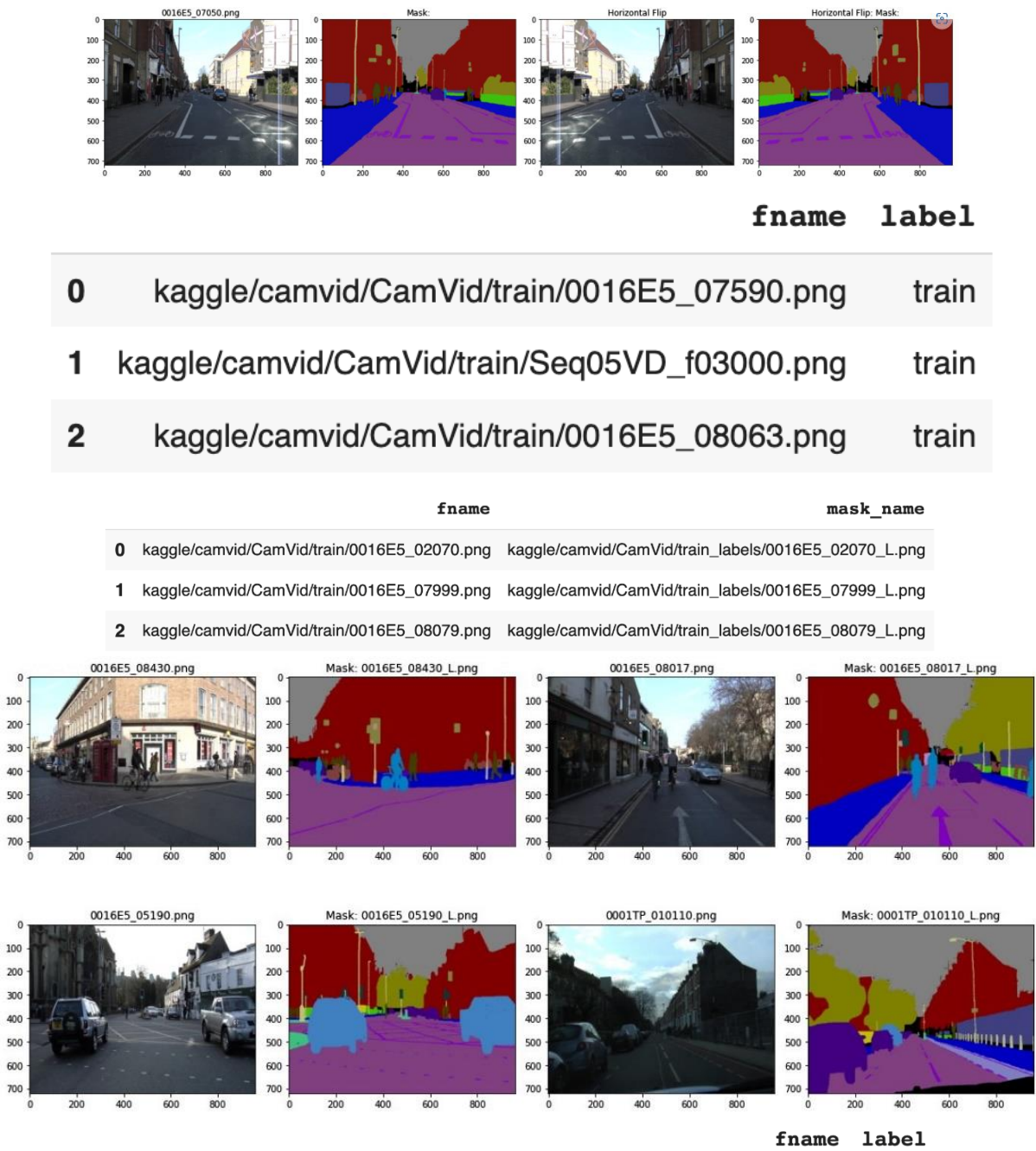
	Filter	Sea Animal	Food	Mall Crowd
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1	Vertical Flip	Yes	Yes	NA
2	Croping and Padding	pad=reflection	pad=reflection	pad=zeros
3	Rotation	max_rotate=180.0	max_rotate=180.0	max_rotate=16.0
4	Warping	magnitude=0.4	magnitude=0.4	magnitude=0.3
5	Lighting	brightness=0.4	brightness=0.4	brightness=0.3
6	Grayscale	NA	NA	Yes
7	Contrast	contrast=0.3	contrast=0.4	contrast=0.4
8	Saturation	saturation=3.0	saturation=3.0	saturation=2.5
9	Hue Shifting	hue=0.15	hue=0.2	hue=0.2
10	Noise Injection	limit=(200.0, 400.0)	limit=(300.0, 400.0)	limit=(300.0, 500.0)
11	Sun Flare	NA	NA	NA
12	Rain	NA	NA	NA
13	Sepia	NA	NA	NA
14	FancyPCA	alpha=0.5	alpha=0.5	NA
15	Random Erasing	max_count=4	max_count=4	NA







Chapter 4: Image Augmentation for Segmentation



fname label

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2	kaggle/camvid/CamVid/train/0016E5_08063.png	train

fname mask_name

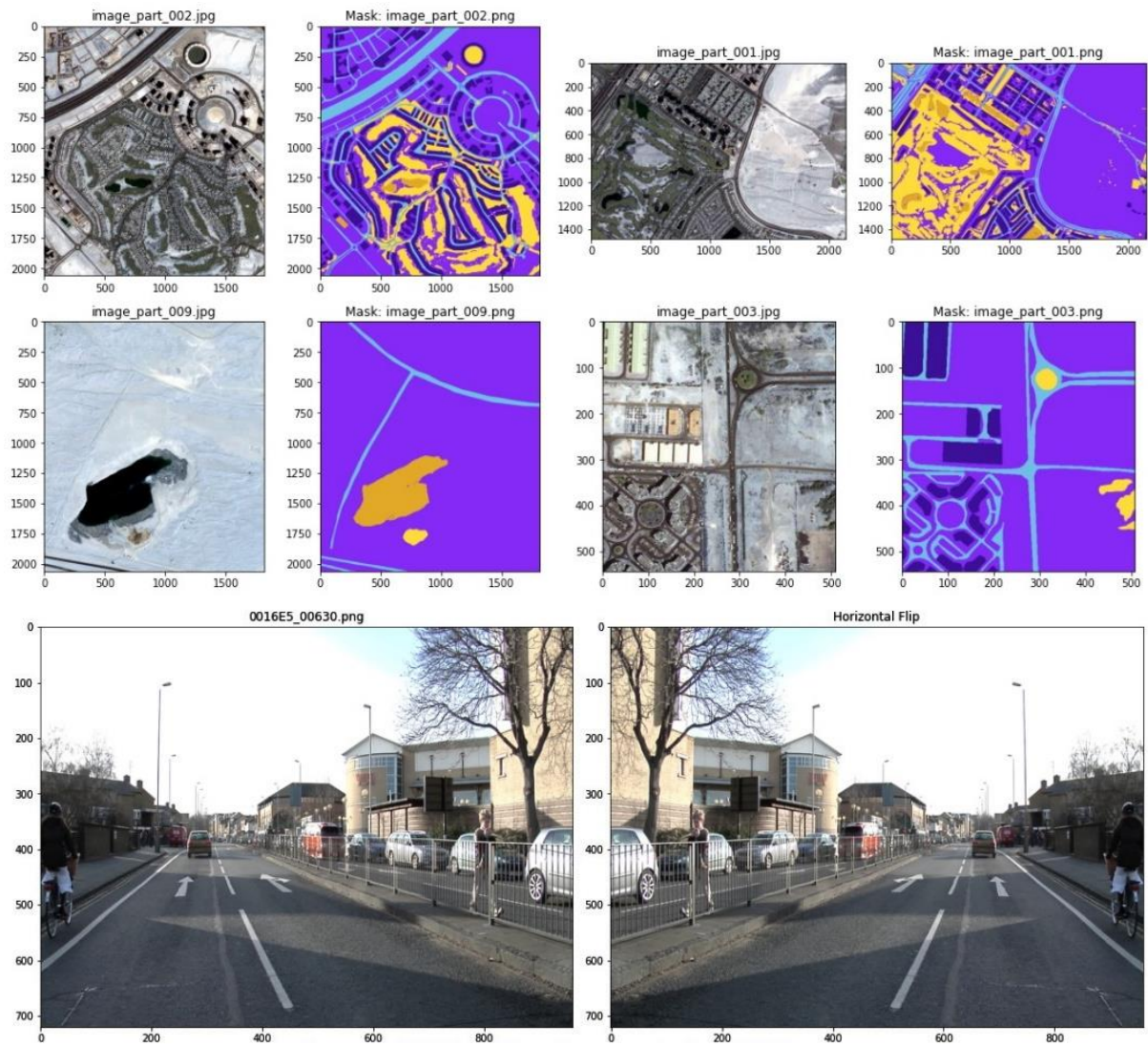
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1	kaggle/camvid/CamVid/train/0016E5_07999.png	kaggle/camvid/CamVid/train_labels/0016E5_07999_L.png
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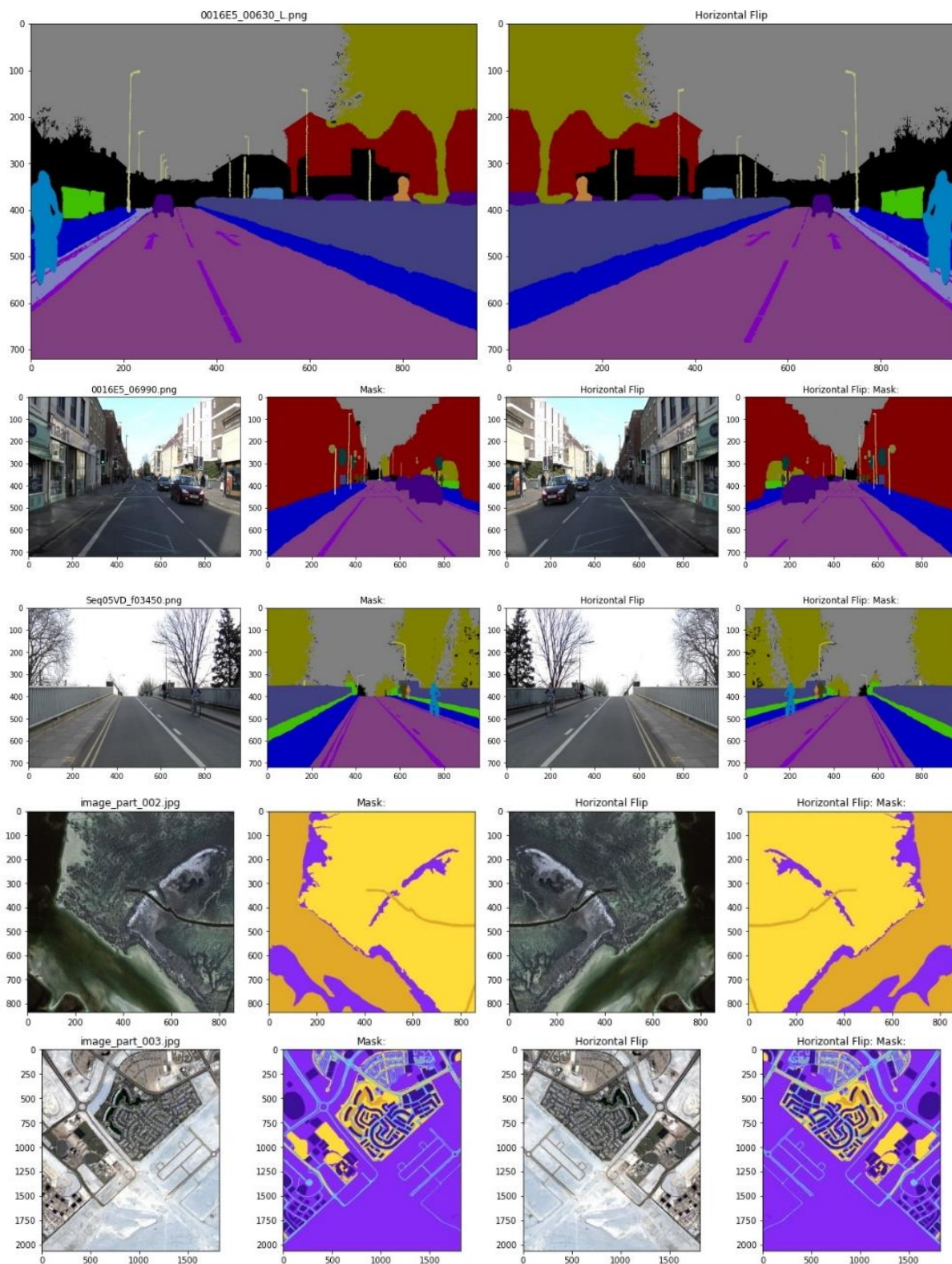
fname label

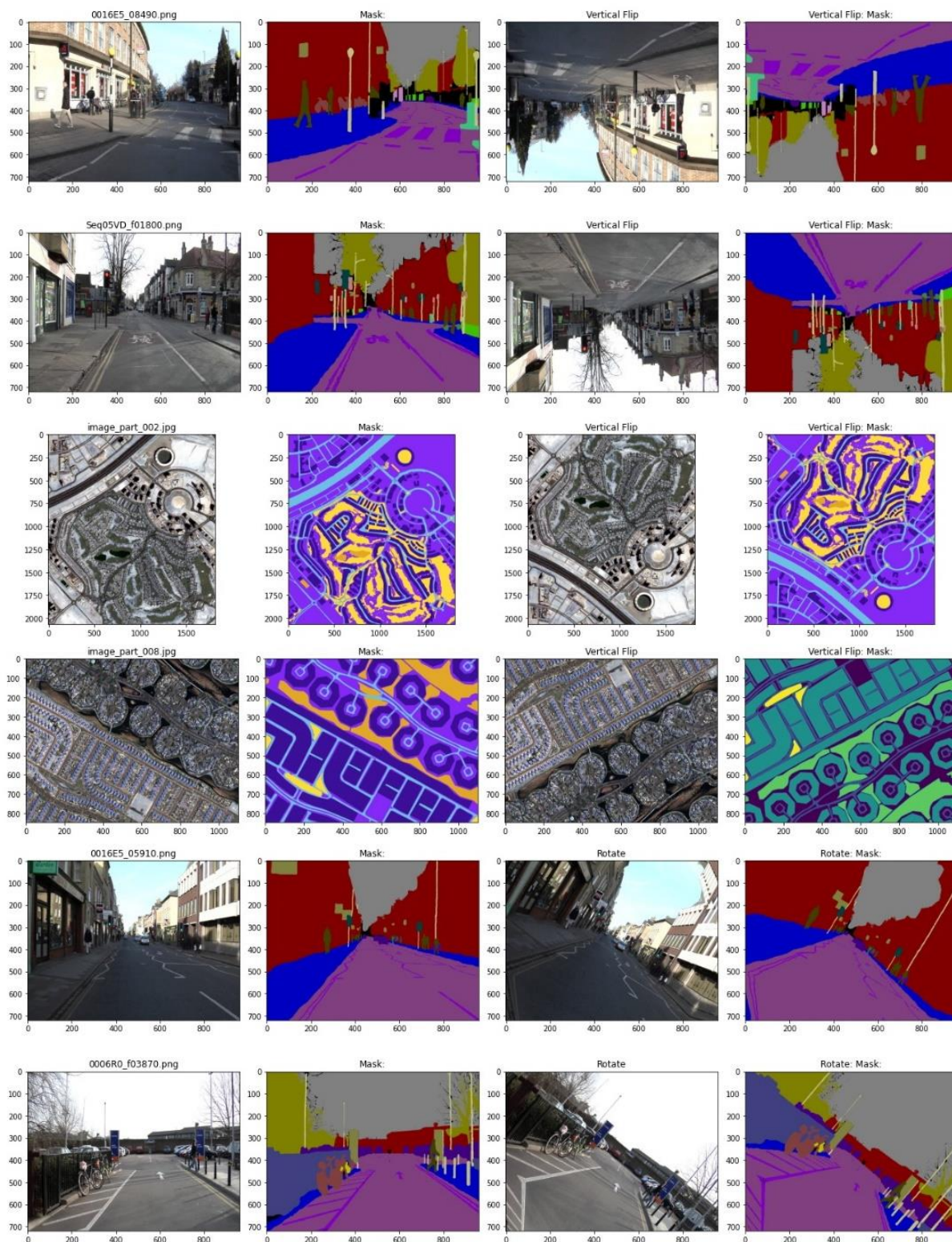
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2	kaggle/semantic-segmentation-of-aerial-imagery/Semantic_segmentation_dataset/Tile_7/images/image_part_003.jpg	images

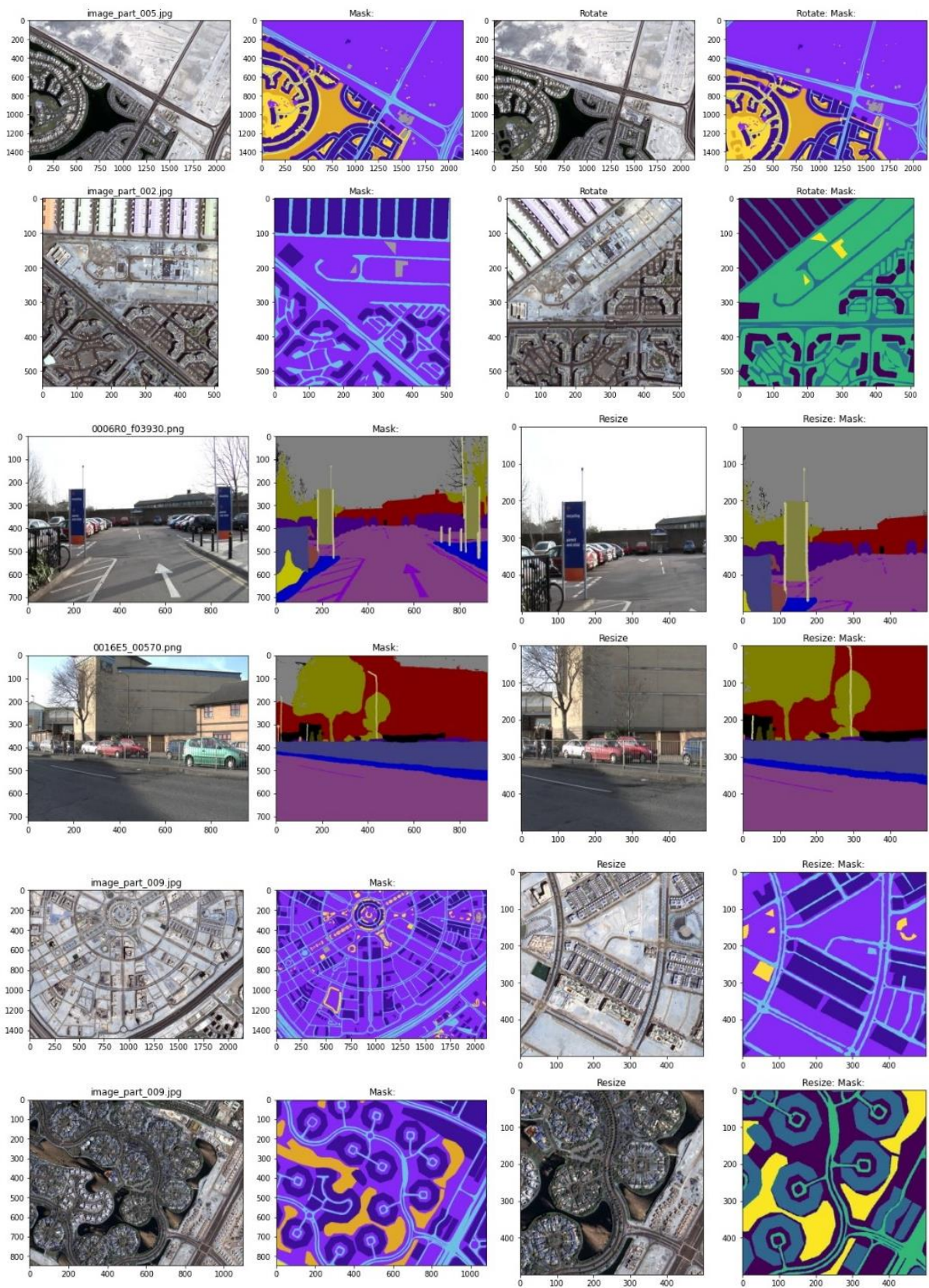
mask_name

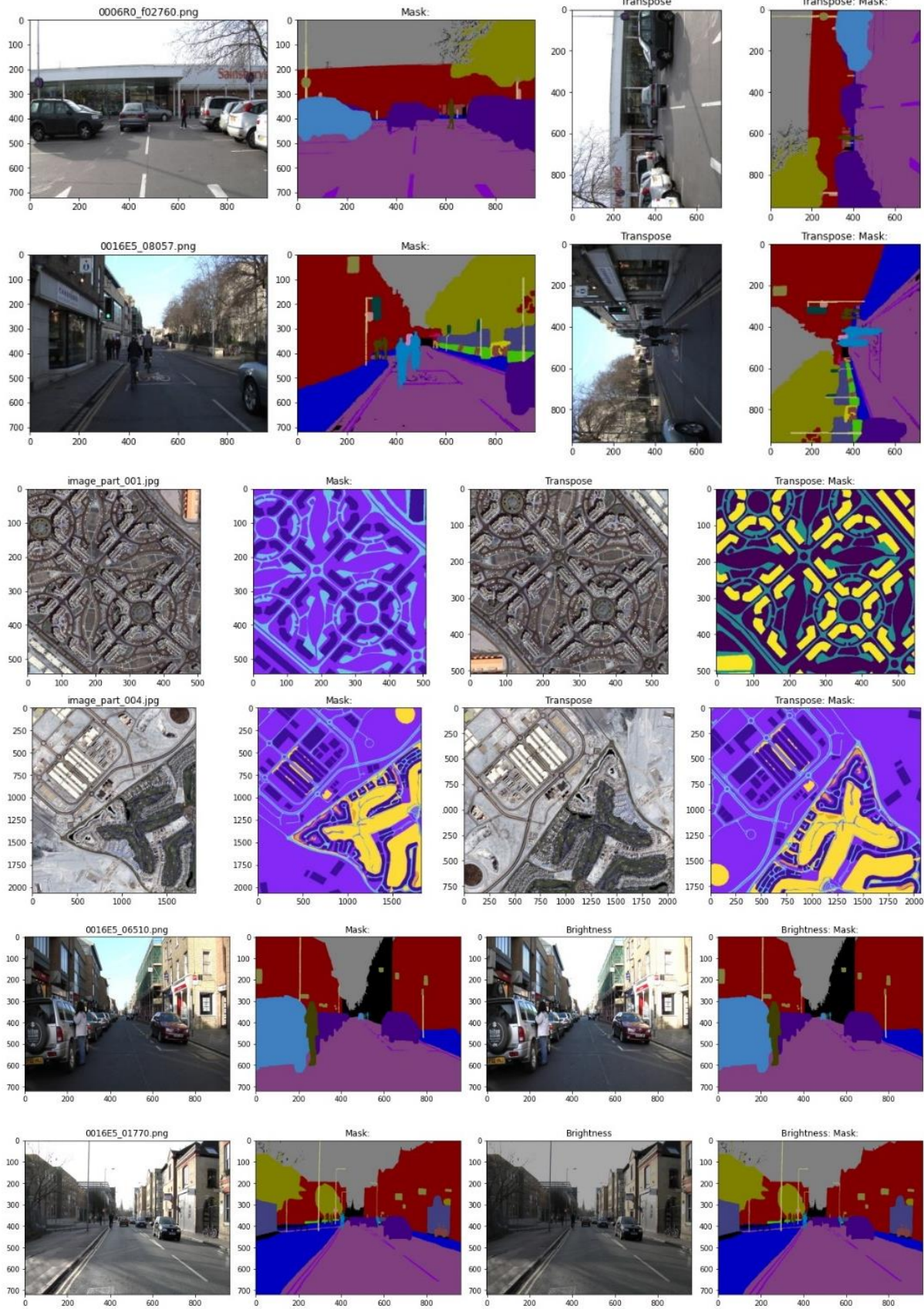
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2	kaggle/semantic-segmentation-of-aerial-imagery/Semantic_segmentation_dataset/Tile_7/masks/image_part_003.png
1	kaggle/semantic-segmentation-of-aerial-imagery/Semantic_segmentation_dataset/Tile_7/masks/image_part_001.png

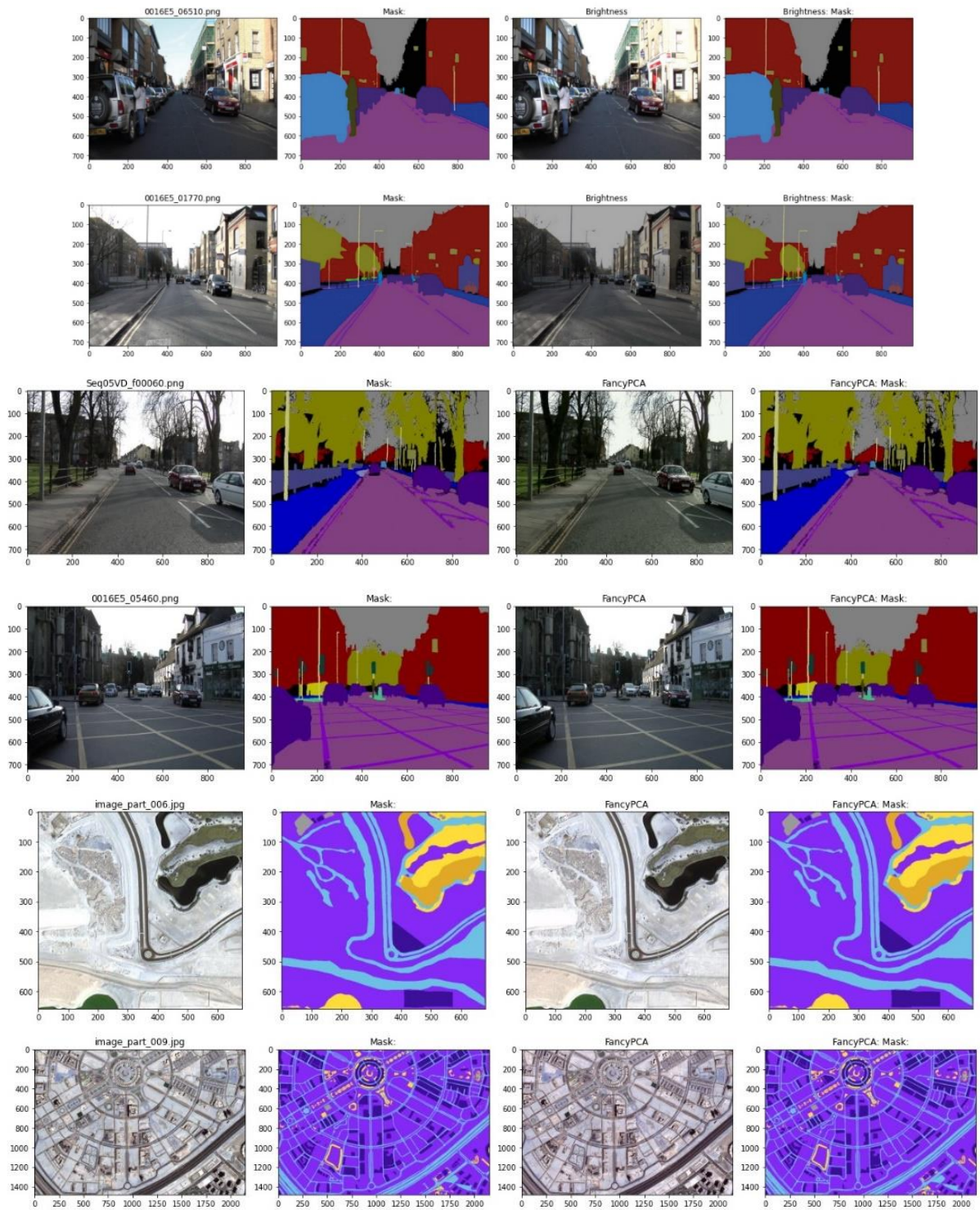




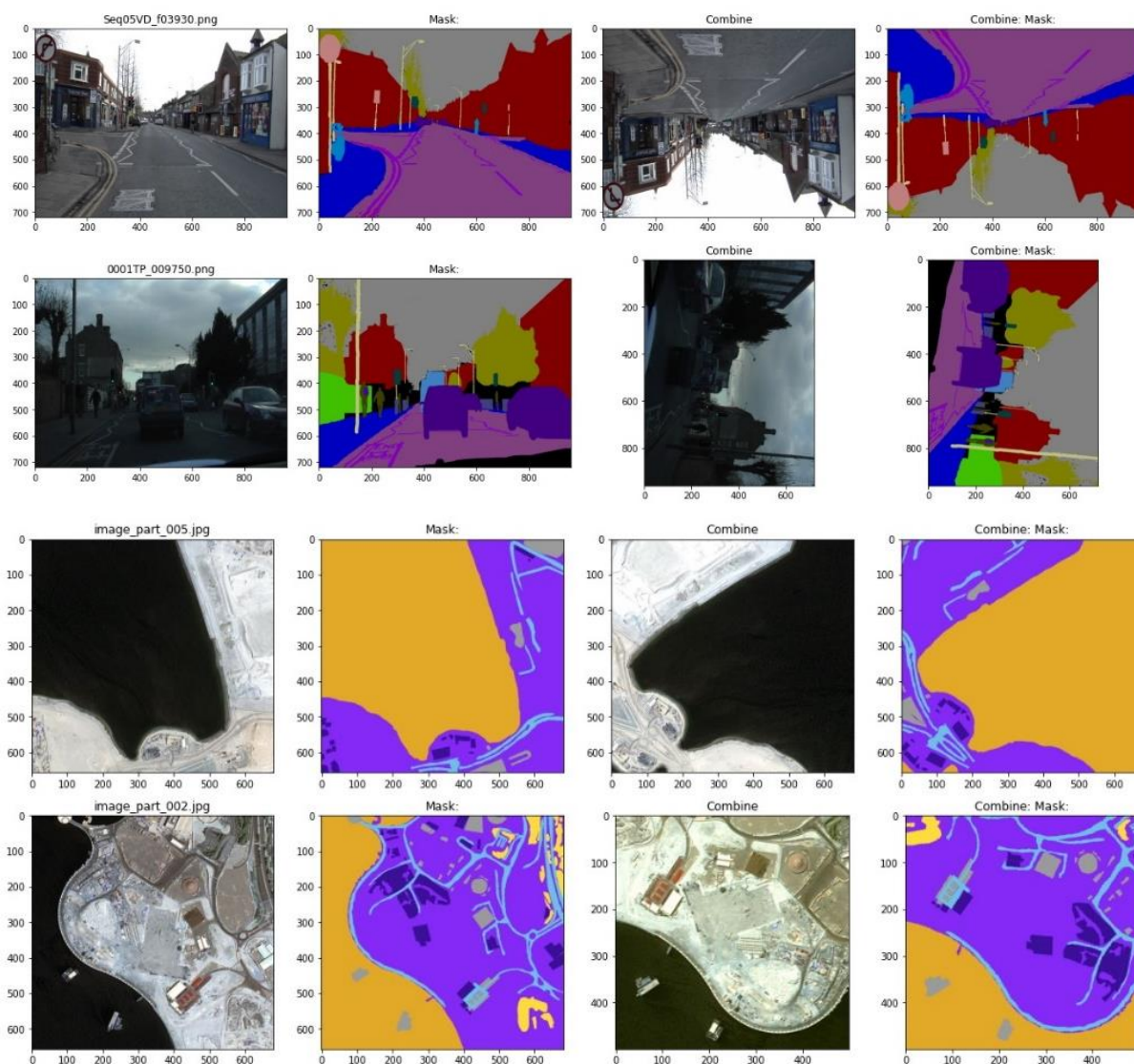








	filters	CamVid	CamVid Mask	Aerial	Aerial Mask
0	Horizontal Flip	Yes	Yes	Yes	Yes
1	Vertical Flip	Yes	Yes	Yes	Yes
2	Resize and Crop	Yes	Yes	Yes	Yes
3	Rotation	Yes	Yes	Yes	Yes
4	Transpose	Yes	Yes	Yes	Yes
5	Lighting	Yes	No	Yes	No
6	FancyPCA	Yes	No	Yes	No

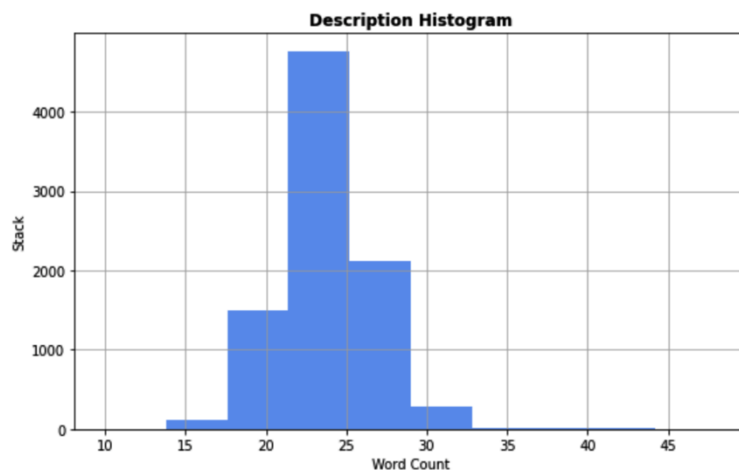
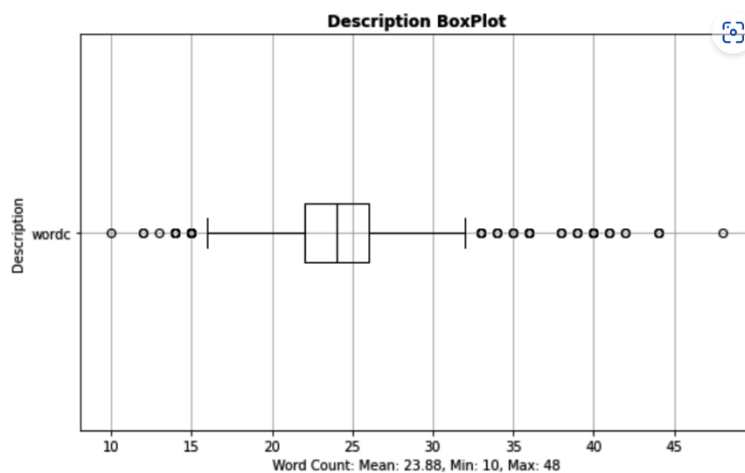


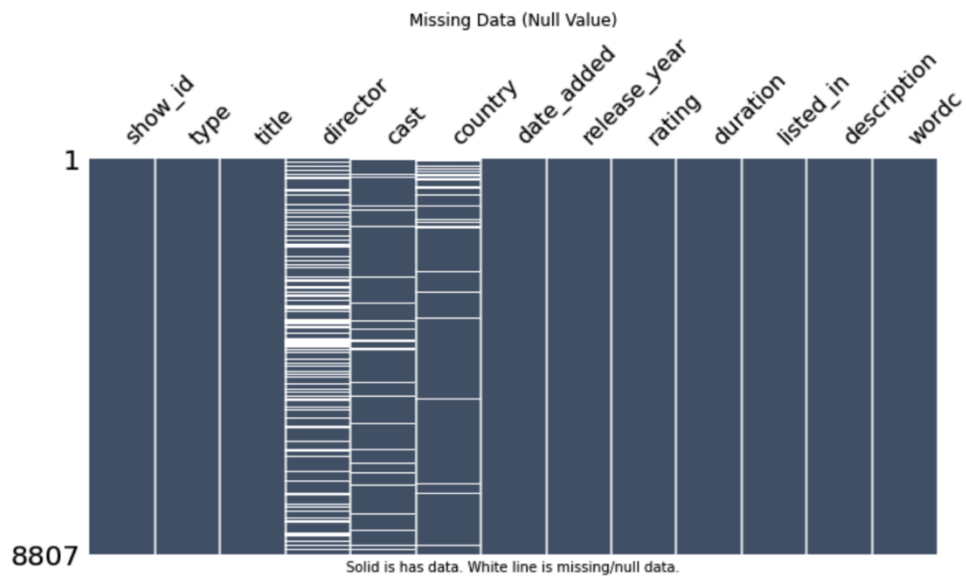
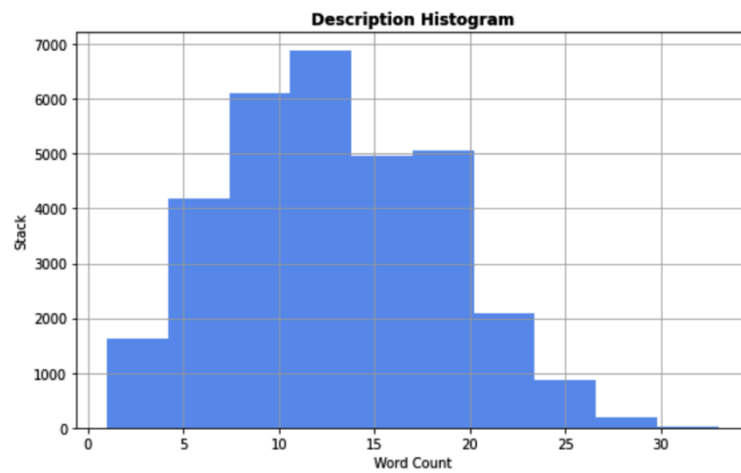
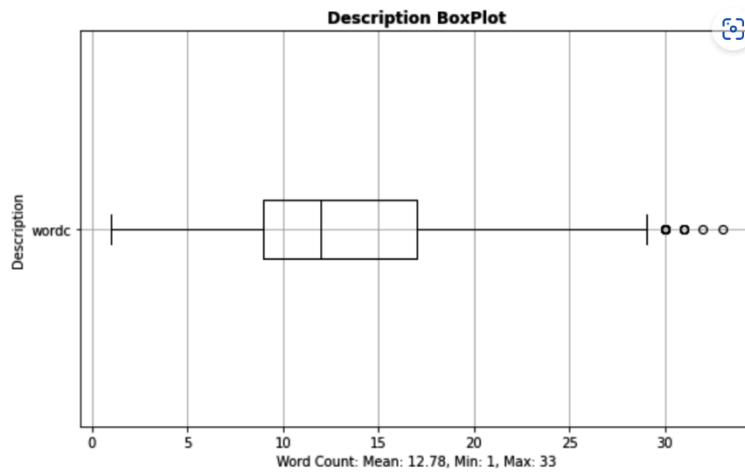
Chapter 5: Text Augmentation, explores text augmentation

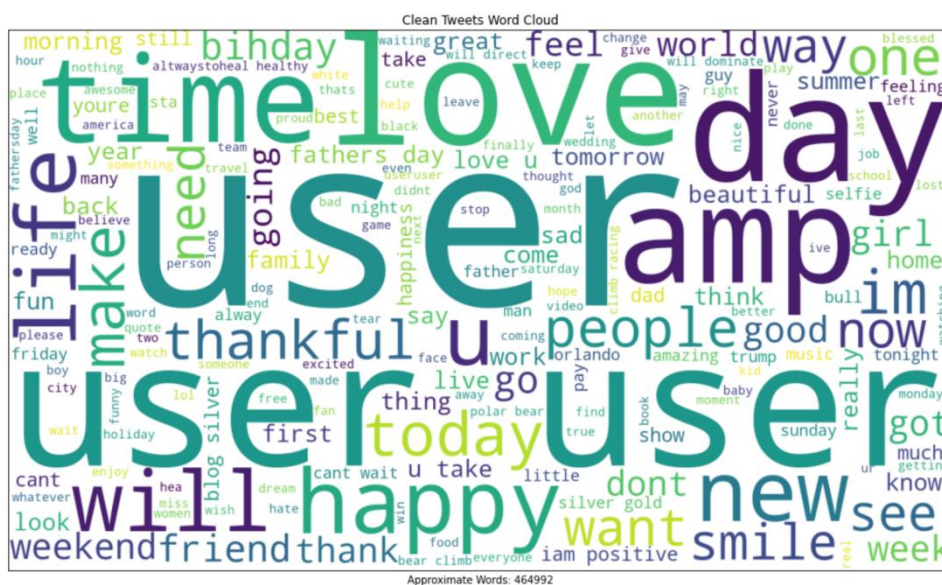
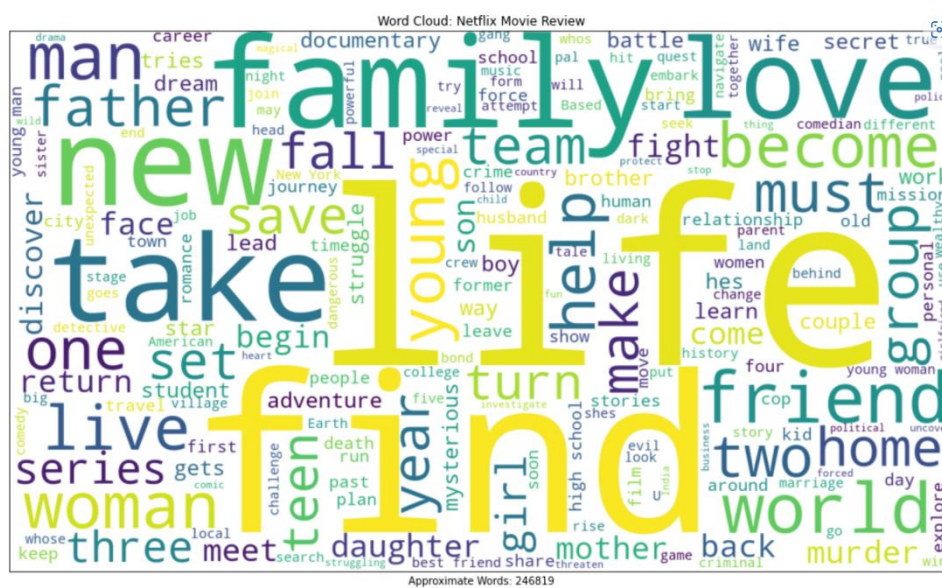
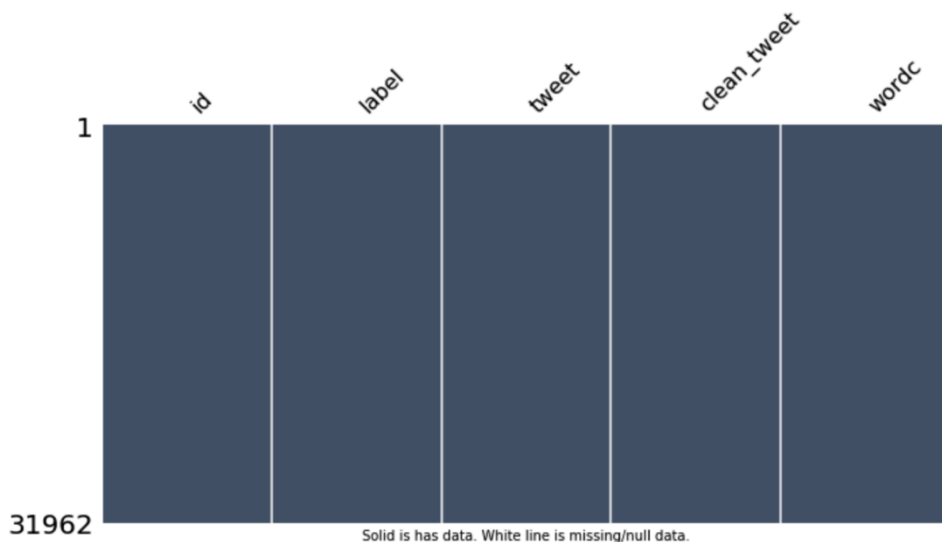
	title	description
391	Wynonna Earp	The outcast descendant of lawman Wyatt Earp teams up with an immortal Doc Holliday to rid the world of demonic revenants from the Wild West.
7629	Nurses Who Kill	Top medical, criminal and psychological experts analyze the motives and methods of nurses who use their positions to kill rather than heal.
8391	The Legend of Michael Mishra	After a life of crime, a notorious kidnapper tries to change his ways and turn over a new leaf to win the heart of the woman he loves.
2157	Wizards: Tales of Arcadia	Merlin's apprentice joins Arcadia's heroes on a time-bending adventure in Camelot, where conflict is brewing between the human, troll and magical worlds.
1179	Mighty Morphin Power Rangers	Five average teens are chosen by an intergalactic wizard to become the Power Rangers, who must use their new powers to fight the evil Rita Repulsa.
2526	She-Ra and the Princesses of Power	Soldier Adora finds a magic sword and her identity as legendary hero She-Ra. She joins the Rebellion, but her best friend stays with the evil Horde.

label	tweet
29602	1 #southsudan provoking neighbours again with noise. the #scumbag that says - he can do what ever he wants. #uncivilised trash. haters
28346	0 glad it worked well for you!!! please let me know what you use and if i can help!
17440	0 so Ã°Ã Â Â Â !!! going to have a show with @user and jessi this sunday! @user 3 girls in 1 hotel room. that sounds fun Ã°Ã Â Â Ã¢Ã Â ¤
15164	0 too sensitive or do fans have a right to be with #xmenapocalypse movie poster?
11153	0 @user he was hit on foot so until the cars around us chill we could all end up like him
8613	0 then it dawned on me that he's not my lil baby brother and eventually he'll be leaving for college.

	label	clean_tweet
24436	0	@user my amp go out 2the victims ampamilies of this horrible attack in orlando. if ur a @user voter think twice #sa
25183	0	@user thanks unc @user ...had #fun #shopping #today w my #uncle #vans #converse
2475	1	@user if you are #hispanic #black #asian a nonracist white, other minority dont serve in military while in power #cnn
12228	0	@user whos excited for robinwood activitiy weekend? see you all tomorrow #early night @user
4342	0	@user too excited to see @user tomorrow!!!!!! with all my #positiveposse @user @user @user #the
27026	1	@user last retro #christmasadve for you this year, and whilst i do love a good bit of #tupperwear i do not want







	OCR Augment	Original
0	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	After experiencing a tragic loss, a woman must resist a new family dynamic that could control the future of her fathers' company and her life.	After experiencing a tragic loss, a woman must resist a new family dynamic that could control the future of her fathers' company and her life.
2	The Kuryu Group makes it their mission to takeover the SWORD district once and for all, but the street gang alliance has a plan of their own.	The Kuryu Group makes it their mission to takeover the SWORD district once and for all, but the street gang alliance has a plan of their own.
3	Two hapless cops find themselves in over their heads as they cross paths with dangerous criminals while searching for Celestina, a beloved goat mascot.	Two hapless cops find themselves in over their heads as they cross paths with dangerous criminals while searching for Celestina, a beloved goat mascot.

OCR Augment

Original

0

It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.

It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.

1

dr. frances cress we18in9 racism
defined #whitesupremacy #
drfranciscrewwelsing

dr. frances cress welsing racism
defined #whitesupremacy
#drfranciscrewwelsing

2

if we pentecostals were as
passionate about lost souls as we
are about politics, we'd turn the
world upside down.

if we pentecostals were as
passionate about lost souls as we
are about politics, we'd turn the
world upside down.

3

just want to start my new job like
now pls #cantkeepwaiting
#newchapter

just want to start my new job like
now pls #cantkeepwaiting
#newchapter

Keyboard Augment

Original

0

It was the beQ5 of timRX. It was the
w8rs6 of tJmWs. It was the age of
siCdom. It was the age of
Eoo>iDhnesW. It was the @(och of
b@kief. It was the 2poVh of
LgcredklitT.

It was the best of times. It was
the worst of times. It was the age
of wisdom. It was the age of
foolishness. It was the epoch of
belief. It was the epoch of
incredulity.

1

CoN3Rian Ben Gl\$ub TostZ thOz
fSme Ehkw in which teams of two
compete to solve increasingly tojTh
gdain teasers. Faster answers mean
more money.

Comedian Ben Gleib hosts this
game show in which teams of
two compete to solve
increasingly tough brain teasers.
Faster answers mean more
money.

2

TNos drama based on reallife
events tells the xYory of George
MDKejja, the rouBh, dRt#emined
new principX; of a noR(rKous Los
Ange:wW high cchoop.

This drama based on reallife
events tells the story of George
McKenna, the tough, determined
new principal of a notorious Los
Angeles high school.

3

Tylers ztUll feeling lost fPIl(wkng the
tragedy thats syra9nrd his
relationship with his father wh@j he
mretc S?ly, a Hurl who
Hnsers5anRs his pain.

Tylers still feeling lost following
the tragedy thats strained his
relationship with his father when
he meets Ally, a girl who
understands his pain.

Keyboard Augment

Original

0

It was the bfzt of ^Jmes. It was the
worE4 of tim@a. It was the age of
w7sdoh. It was the age of
toolOshJeZs. It was the eLosh of
belJ2f. It was the SpPch of
&nccculiyy.

It was the best of times. It was
the worst of times. It was the age
of wisdom. It was the age of
foolishness. It was the epoch of
belief. It was the epoch of
incredulity.

1

wik: never understand people who
dump fheif kiRA, damage that does
cant b ciDed, i Onlj holF 2 l)be them
enough 2 help th@j 4Yivr # dbd

will never understand people who
dump their kids, damage that
does can't b fixed, i only hope 2
love them enough 2 help them
4give #dbd

2

can wh8teE only immigration make
qme#ida grFAt ZRain? via @ TsDr
jarodtaylor # asslicker

can whites-only immigration make
america great again? via @user
#jarodtaylor #asslicker

3

mldjing! !! woke up VDeligg gd2at.
toRZy. thW5e is # sHnsGin2. # Hon

morning!!! woke up feeling great.
today. there is #sunshine .
#nonke # #love

Random Insert Augment

Original

0

It was the ab+est of t6iMmes. It was the 7worsgt of t(imezs. It was the age of wisdqoZm. It was the age of bfaoAolis6hness. It was the ecpocFh of bfeli!ef. It was the epoZc)h of incureUdu4l+ity.

It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.

1

SuZddein!ly possessed woiBh supernatural kpoZwers, a fa\$theJr sets out to help his esEtrdaqnged daughter, whos at #r!isk of losing evUeNrythikng sh)eEs lived for.

Suddenly possessed with supernatural powers, a father sets out to help his estranged daughter, who's at risk of losing everything she's lived for.

2

In a drama bkas_ed on a tVrHue sXto(ry, Bra4zi\$liajn 4backpafckBer Gabriel Buchmann spejndws his gap yeea)r exhp!dorinJg Africa. Why does he die in the MaOlaOwi mountains?

In a drama based on a true story, Brazilian backpacker Gabriel Buchmann spends his gap year exploring Africa. Why does he die in the Malawi mountains?

3

Fresh Army rreicrEuit Amy Cole is assigned to G3uUant_anamo Byayns CDaUmp MXRUay, w3hesre she fo^rJms a surprising boWnSd wUitph one of the prisoners in her charge.

Fresh Army recruit Amy Cole is assigned to Guantanamo Bays Camp XRay, where she forms a surprising bond with one of the prisoners in her charge.

Random Delete Augment

Original

0	It was the es of mes. It was the rst of ime. It was the age of wsdo. It was the age of lishnss. It was the eoh of blif. It was the poc of incrdli.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	el said	well said
2	@ ur went back to the sre, on to in out th one of the young empoyos had resigned, due to srespetfl tretmt	@user went back to the store, only to find out that one of the young employees had resigned, due to disrespectful treatment
3	i am alue. # iam # osive # ffirion	i am valued. #iam #positive #affirmation

Random Delete Augment

Original

0	It was the bs of tms. It was the wos of ies. It was the age of wisd. It was the age of olisess. It was the eoc of beli. It was the poh of incduli.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	A mde student rstst to olece after witnessing greed and orpton wea hac on his life.	A model student resorts to violence after witnessing greed and corruption wreak havoc on his life.
2	A man wt blar isoer moves oe with his parents and makes a connection wh a spird widow, hih hes both of em heal in unique ways.	A man with bipolar disorder moves home with his parents and makes a connection with a spirited widow, which helps both of them heal in unique ways.
3	out African comedian Loyiso ol serves up filterfree uor as he ifs aut re, idnti, oitis, and a school prank gone embarngly wrong!	South African comedian Loyiso Gola serves up filterfree humor as he riffs about race, identity, politics, and a school prank gone embarrassingly wrong!

Random Delete Augment

Original

0

It was the es of mes. It was the
rst of ime. It was the age of
wsdo. It was the age of lishnss.
It was the eoh of blif. It was the
poc of incrdli.

It was the best of times. It was the
worst of times. It was the age of
wisdom. It was the age of
foolishness. It was the epoch of
belief. It was the epoch of incredulity.

1

el said

well said

2

@ ur went back to the sre, on
to in out th one of the young
empoys had resigned, due to
srespetfl tretmt

@user went back to the store, only to
find out that one of the young
employees had resigned, due to
disrespectful treatment

3

i am alue. # iam # osive # ffirion

i am valued. #iam #positive
#affirmation

**Random Substitute
Augment**

Original

0	It was the b)sm of timas. It was the wo4st of tigks. It was the age of wi1dBm. It was the age of fo8l2shn9Fs. It was the epvvh of b2lies. It was the 4po5h of inc3e8uFiDy.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	In his seRoHd standup lp9c#al, Daliem \$oYa reminisces about his childhood, ponders MexM@Nn t+aditi%nY and points out a m6Vor problem with aocB.	In his second standup special, Daniel Sosa reminisces about his childhood, ponders Mexican traditions and points out a major problem with Coco.
2	A nameless widow sJggleC multiple jobs to sSppsAt her dvoghtWrs)eRisi\$n to study ebroam, InMy to wssc0ver that she has ot9eg plans.	A nameless widow juggles multiple jobs to support her daughter's decision to study abroad, only to discover that she has other plans.
3	W_Dn a lonely tee^aOej ski0p his (ognJng c&aisms to sit in a lovely gaqdeP, he mem8s a mysterious oJter woman who shares his fHe@Mngs of alienation.	When a lonely teenager skips his morning classes to sit in a lovely garden, he meets a mysterious older woman who shares his feelings of alienation.

**Random Substitute
Augment**

Original

0	It was the CeJt of tiXJs. It was the wVQst of tiFeX. It was the age of wXsdWm. It was the age of foOlisPn\$ls. It was the eOoWh of belje\$. It was the wpolh of inFreduW9(y.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	# op&ls baBkildq to call emergency opec meeting on proyucMiKn cut # bQo6 # &ilwer # gYlf # forex	#opecs barkindo to call emergency opec meeting on production cut #blog #silver #gold #forex
2	laEt n6ghK is the b0sq hahahahah # wAdleBvaywiedom # enough # date # hoAieF	last night is the best hahahahah #wednesdaywisdom #enough #date #homies
3	you r vdking us hlestkon why we vpteB 4u @ u^e3 8 yrs ago, but 0o^ey vpan7es ppl. u r\$d out. # lruDh	you r making us question why we voted 4u @user 8 yrs ago, but money changes ppl. u sold out. #truth

Random Swap Augment

Original

0

It was the ebts of tmise. It was the
wsort of teims. It was the age of
iwsdmo. It was the age of
ofolishenss. It was the eophc of
beilfe. It was the peohc of
icnredluity.

It was the best of times. It was the
worst of times. It was the age of
wisdom. It was the age of
foolishness. It was the epoch of
belief. It was the epoch of
incredulity.

1

Between scesne from his concert
in So Apulso Theatro Munciipal,
rapper and activist Emicida
elcebratse the rhic leacgy of Black
Brazilian uculture.

Between scenes from his concert
in Sao Paulo's Theatro Municipal,
rapper and activist Emicida
celebrates the rich legacy of Black
Brazilian culture.

2

When an nuphapily amrrdie
woman idsocvesr a man from her
past has a role in a olcla theater
production, shell do anything to
reconnect twih him.

When an unhappily married
woman discovers a man from her
past has a role in a local theater
production, she'll do anything to
reconnect with him.

3

A computer anaytls ebcmeos a
atrgte atfre she stumbles onto a
ocnpsirayc via a ymsetriuos floppy
disk, focrngi her to go on the run
to celra her name.

A computer analyst becomes a
target after she stumbles onto a
conspiracy via a mysterious floppy
disk, forcing her to go on the run to
clear her name.

Random Swap Augment

Original

0	It was the best of itmse. It was the wsort of tmise. It was the age of wsidmo. It was the age of ofolishnsse. It was the epcho of ebleif. It was the epoch of nicrdueltiy.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	cnaont taste or smell anythign # ehplme # inomutstetohis # perfecttiming # weekend	cannot taste or smell anything #helpme #imnotusetohis #perfecttiming #weekend
2	child attacked by lailgaotr at walt disney woldr # lwatdisnyeowrdl	child attacked by alligator at walt disney world #waltdisneyworld
3	@ seur when its alreday utesyda and your wcw ndot even curr	@user when it's already tuesday and your wcw dont even curr

Word Spelling Augment

Original

0	It was withe best of times. It wos Then worstest of times. Hit wa there's age of wisdom. It was the ago of foolishness. It was the epoch of believe. It was the epoch od incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	Mr.. Peabody and Sherman host a zany latenight commedy showe Fron a swanky penthouse, winth timetraveling storical figures y a live audiance.	Mr. Peabody and Sherman host a zany late-night comedy show from a swanky penthouse, with timetraveling historical figures and a live audience.
2	As a wonem scours Hyderabad for her missing husband, she becamas entangled yn a conspiracy the suggests theres moer top thi mysterie than meets trhe eye.	As a woman scours Hyderabad for her missing husband, she becomes entangled in a conspiracy that suggests there's more to the mystery than meets the eye.
3	In this biographical dramact, Britains King George VI stuggles wkth an embarrassed stutter utill he seeks hellp from spech therapist Lionel Logue.	In this biographical drama, Britain's King George VI struggles with an embarrassing stutter until he seeks help from speech therapist Lionel Logue.

	Word Spelling Augment	Original
0	It war the bets of teams. It was the worst of timeas. It was yhe age of wisdom. It was that age of foolishness. I't were thirty epoch ol belief. It was the epoch of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	losting teeth and growing # pineapples # sammur # staurday	losing teeth and growing #pineapples #summer #saturday
2	@ user @ user @ user Fridays whit yor, tiina, hab\ve fin!	@user @user @user friday to you, tiina, have fun!
3	nove planing ira stain continuum on muice song	now playing ira stain continuum on music song

	Word Split Augment	Original
0	It was the b est of tim es. It was the wo rst of tim es. It was the age of wi sdom. It was the age of fool ishness. It was the ep och of bel ief. It was the e poch of incre dulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	To assert her independence from her rig id fa thers expec tations, a headst rong woman h ires a de sperate Los A ngeles man to pose as her f ianc in A frica.	To assert her independence from her rigid father's expectations, a headstrong woman hires a desperate Los Angeles man to pose as her fiancé in Africa.
2	A U. S. marsh als trou bling visions compro mise his investigation i nto the disappearance of a pat ient fr om a hospital for the cri minally i nsane.	A U.S. marshal's troubling visions compromise his investigation into the disappearance of a patient from a hospital for the criminally insane.
3	Clashes bo th on the st reet and in the bedro om p its the female he ad of the Orga nized Cr ime Unit aga inst the cocky le ader of a potsmuggling ring.	Clashes both on the street and in the bedroom pits the female head of the Organized Crime Unit against the cocky leader of a potsmuggling ring.

Word Split Augment

Original

0

It was the b est of ti mes. It was
the w orst of ti mes. It was the
age of w isdom. It was the age
of fooli shness. It was the ep
och of beli ef. It was the e poch
of increduli ty.

It was the best of times. It was the
worst of times. It was the age of
wisdom. It was the age of
foolishness. It was the epoch of
belief. It was the epoch of incredulity.

1

mirrorofthe witch ep9 ti me! !!

#mirrorofthewitch ep9 time!!!

2

m agical rooster s imulation i
w ant to climb the v ast expanse
of mountains. it rea ched the lea
kage wa

#magical rooster simulation i want to
climb the vast expanse of mountains.
it reached the leakage wa

3

why # cu stomers get ev en wh
en youre po lite amp how to a
void it @ user

why #customers get even when
you're polite amp how to avoid it
@user

**Word Random Swap
Augment**

Original

0	It was the times best of. was It the worst of times. It the age was of wisdom It. the was age of foolishness. was It the epoch of belief. It was the of epoch. incredulity	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	Herself talented a, OEi artist works her with father, Tetsuzo, later known as Hokusai, the on woodblock prints that make would Edo worldwide famous.	Herself a talented artist, OEi works with her father, Tetsuzo, later known as Hokusai, on the woodblock prints that would make Edo famous worldwide.
2	Massage a therapist gets in over he his head when partners with a charismatic pal childhood the in lucrative but shady of business global arms dealing.	A massage therapist gets in over his head when he partners with a charismatic childhood pal in the lucrative but shady business of global arms dealing.
3	Nave a social worker a brings 10yearold child into her home to the rescue from girl abusive parents only to she learn that what isnt she seems.	A naive social worker brings a 10-year-old child into her home to rescue the girl from abusive parents only to learn that she isn't what she seems.

**Word Random Swap
Augment**

Original

0	It was best the of times. was It the worst of times. It the was age of wisdom. It was the age of foolishness. It was the epoch belief of. was It the epoch incredulity of.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	@ user these wever are ppl love who the rep need pay open to effing newspaper a. . and. im a republican! waiting4trump #	@user wever these ppl are who love the rep pay need to open a effing newspaper...and im a republican! #waiting4trump
2	@ how user a to become # successful ex amp #. singlemom # # aga3 dati	@user how to become a #successful amp ex#singlemom. #aga3 #dati
3	Service bubble! bubbles # # # brunch cheers # # sinema # fathersday nashville # happiness	bubble service! #bubbles #cheers #brunch #sinema #fathersday #nashville #happiness

**Word Random Crop
Augment**

Original

0	It was the best of times. It was the worst of times. It was the age of wisdom. It of belief. It was the epoch of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	After a life of crime, a notorious kidnapper tries to to win the heart of the woman he loves.	After a life of crime, a notorious kidnapper tries to change his ways and turn over a new leaf to win the heart of the woman he loves.
2	Richard accepts a bet that he cant find a companion app hes using includes a 45day contract.	Richard accepts a bet that he can't find a companion to a friend's wedding, not knowing the dating app hes using includes a 45-day contract.
3	After Marcos reinvent himself as a modern man with the help of a childhood friend and an online guru.	After Marcos is dumped by his girlfriend, he attempts to reinvent himself as a modern man with the help of a childhood friend and an online guru.

**Word Random Crop
Augment**

Original

0	It was the best of times. It was the worst of times. It was the age of wisdom the epoch of belief. It was the epoch of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	user hit on foot so until the cars around us chill we could all end	@user he was hit on foot so until the cars around us chill, we could all end up like him
2	how am i going kid when i cant even play lax myself	how am i going to give lacrosse lessons to this kid when i cant even play lax myself
3	a successful day of hunting #johnxsafaris # eastcapehunting # family	after a successful day of hunting #johnxsafaris #eastcapehunting #family #proud #africa

Synonym WordNet Augment**Original**

0	Information technology be the best of times. It was the worst of metre. It was the years of wisdom. It be the geezerhood of foolishness. It was the epoch of belief. It was the date of reference of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	Following a disaster, a female parent and her teen son move to a relatives vacant holiday home, where eerie and unexplained force out conspire against them.	Following a tragedy, a mother and her teen son move to a relatives vacant vacation home, where eerie and unexplained forces conspire against them.
2	After her logos dies in an stroke, a sound consultant is force to prove her innocence when shes criminate of his murder.	After her son dies in an accident, a legal consultant is forced to prove her innocence when she's accused of his murder.
3	After 16yearold Cyntoia Brown make up sentenced to life in prison house, interrogative sentence astir her past, physiology and the law itself yell her guilt into question.	After 16-year-old Cyntoia Brown is sentenced to life in prison, questions about her past, physiology and the law itself call her guilt into question.

Synonym WordNet Augment**Original**

0	It was the best of time. It was the bad of times. It constitute the age of wisdom. It be the long time of foolishness. It was the epoch of feeling. Information technology was the epoch of disbelief.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	im sure the @ user testament withal suppo him amp the right field to have a gunman. # wakeupamerica!!	i'm sure the @user will still suppo him amp the right to have a gun. #wakeupamerica !!
2	# coffe # cake # tea # teapay fourth dimension @ reggio coffee berry house	#coffee #cake #tea #teapay time @ reggio coffee house
3	hardcore vinyls the best asian site	hardcore vinyls the best asian site

Antonym Augment

Original

0	It differ the evil of times. It differ the best of times. It differ the age of wisdom. It differ the age of foolishness. It differ the epoch of belief. It differ the epoch of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	Comedy duo Thomas Middleditch and Ben Schwartz unbend large ideas into epically funny stories in this series of partly improvised comedy specials.	Comedy duo Thomas Middleditch and Ben Schwartz turn small ideas into epically funny stories in this series of completely improvised comedy specials.
2	The cast and crew of the 1981 Broadway unmusical Merrily We Roll Along recall joy and heartbreak during the production of a surefire hit that wasnt.	The cast and crew of the 1981 Broadway musical Merrily We Roll Along recall joy and heartbreak during the production of a surefire hit that wasn't.
3	Extreme pressure from his father to excel at school during childhood lack safe psychological effects on a brilliant but suicidal mans adult life.	Extreme pressure from his father to excel at school during childhood has dangerous psychological effects on a brilliant but suicidal man's adult life.

	Antonym Augment	Original
0	It differ the worst of times. It differ the unregretful of times. It differ the age of wisdom. It differ the age of foolishness. It differ the epoch of belief. It differ the epoch of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	# visiting gorilla simulator you obviate to unmake to adapt to the environment. the need to tear the city. materi	#visiting gorilla simulator you need to do to adapt to the environment. the need to tear the city. materi
2	@ user whooppppp stop take away me all idle up # ska # reggae	@user whooppppp stop getting me all worked up #ska #reggae
3	i differ stunning. # iam # negative # affirmation	i am stunning. #iam #positive #affirmation

**Netflix Reserved word
augment**

Original

0

It was the best of times. It was the worst of times. It was the age of intelligence. It was the age of idiocy. It was the epoch of belief. It was the epoch of incredulity.

It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.

1

The elite real estate brokers at The Oppenheim Group sell the luxe existence to affluent buyers in LA. The drama ramps up when a new agent joins the team.

The elite real estate brokers at The Oppenheim Group sell the luxe life to affluent buyers in LA. The drama ramps up when a new agent joins the team.

2

In this dramatization, the Virgin Mary works a miracle on a girl in 1623 Mexico. Four centuries later, a brood make a pilgrimage for their own child.

In this dramatization, the Virgin Mary works a miracle on a girl in 1623 Mexico. Four centuries later, a family make a pilgrimage for their own child.

3

Evidence found on the body of a homicide victim sparks hope in a prosecutor that his sister who disappeared 25 years earlier could still be alive.

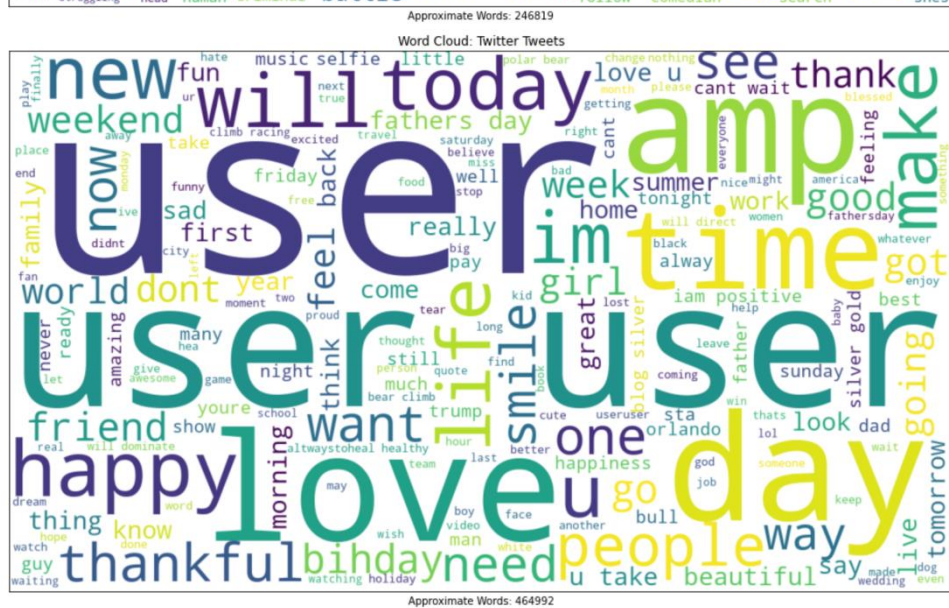
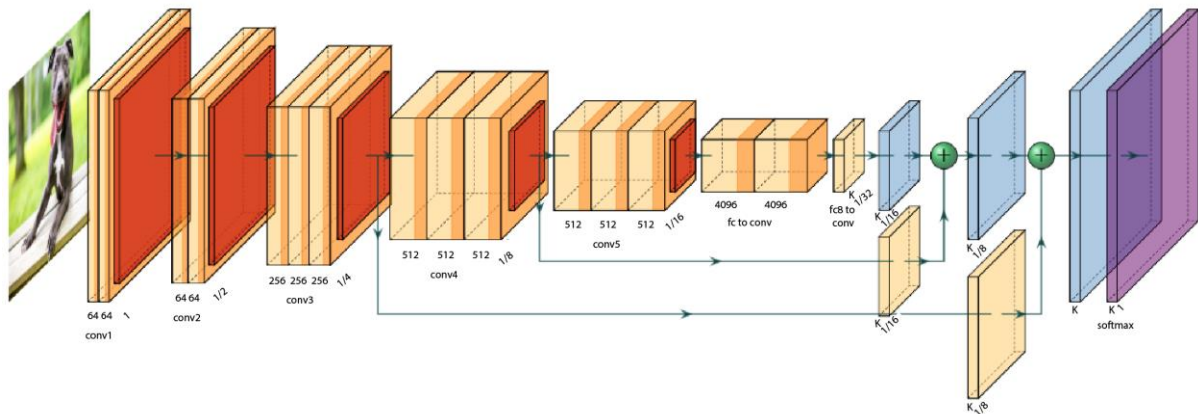
Evidence found on the body of a homicide victim sparks hope in a prosecutor that his sister who disappeared 25 years earlier could still be alive.

**Twitter Reserved word
augment**

Original

0	It was the best of times. It was the worst of times. It was the age of sagacity. It was the age of idiocy. It was the epoch of belief. It was the epoch of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	@ people i am thankful for freedom of speech. # thankful # positive	@user i am thankful for freedom of speech. #thankful #positive
2	there is a mona lisa style to this mans face # sad @ customer	there is a mona lisa style to this man's face #sad @user
3	quality hour with my man. # homedate # weekend # loved	quality time with my man. #homedate #weekend #loved

Chapter 6: Text Augmentation with Machine Learning



Word2Vec-GoogleNews Word Embedding
Augment

Original

0 Anja It tomahto was the best of times. It was the worst WORK of milds times. It Govern was the age of wisdom. It was Microchip the ChevronTexaco age Elemer of medullary foolishness. It was the epoch of belief. It was the epoch of Portland incredulity.

It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.

1 Photographer, writer Punta and KOOQF director Sam Bernie Jones Adaptif sets his famous guests at www.zincoremals.com ease with Poydras his freewheeling, insightful celebrity Singer interviews without agendas.

Photographer, writer and director Sam Jones sets his famous guests at ease with his freewheeling, insightful celebrity interviews without agendas.

2 rotary Blending fact with myth, Diomed this conspiracyminded docufiction argues Dangerous that the U. diving S. Exchange purchased Yugoslavias secret makeing space Sonoro program in the Original 1960s.

Blending fact with myth, this conspiracyminded docufiction argues that the U.S. purchased Yugoslavias secret space program in the 1960s.

3 Based Kent on Cabus DC Comics Green Arrow, Office an affluent playboy Ed becomes a Wershing vengeful superhero, Rangjung saving the city JURY from Elizabeth villains armed with just a infinitum bow and arrows.

Based on DC Comics Green Arrow, an affluent playboy becomes a vengeful superhero, saving the city from villains armed with just a bow and arrows.

Word2Vec-GoogleNews Word Embedding
Augment

Original

0 It was the best of times. Dale It was the worst of Scrappage times. It ingredient was the age of Home wisdom. It was Esam the age of foolishness. It FREE was Minister the epoch Karl of belief. PTI It was the batshit epoch of incredulity.

It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.

1 @ Lynda user find your MANCHESTER place Schleiss how NORTH to outsma # stress # zensei in # miamishores with Olivant your # Mohammed family in # Borneo min

@user find your place how to outsma #stress #zensei in #miamishores with your #family in #min

2 uh oh, warranty lattice on @ Bendetson user humanoid is Elizabeth apparently exactly Puks 70 years. SOUTH ing Pesticide himself. # daisydaisy

uh oh, warranty on @user humanoid is apparently exactly 70 years. ing himself. #daisydaisy

3 not anymore. Amphlett im Coatesville getting maccas Reigns for dinner

not anymore. im getting maccas for dinner

0	Usually was ultimately best of times. It was the worst of times. It was those age of wisdom. It wasthe certainly Matures_ages_##-## of foolishness. It was this paradigm_shifts of belief. It was on Sokoto_Caliphate of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	Musicloving baby Johny goes before dancefilled zany_adventures withtheir consoling_pat family, friends and adorable critters early LiquidViagra colorful, live-action/CGI preschooler series.	Musicloving baby Johny goes on dancefilled adventures with his family, friends and adorable critters in this colorful, animated preschooler series.
2	An intrepid troopers inspector forced into a desk plum_assignment wants wrest matters into his own finger when ruthlessly_efficient offenders should released on a technicality.	An intrepid police inspector forced into a desk job must take matters into his own hands when ruthless criminals are released on a technicality.
3	Thus this Scorsese decaffeination of the sparkling stage performance, five spirited souls take on whole dark threat growing when clandestine Skull Castle.	In this cinematic distillation of the electrifying stage performance, seven spirited souls take on the dark threat growing in shadowy Skull Castle.

0	Such originally the best of times. It was the worst of times. Unfortunately went the age of wisdom. It was the mid_##s of foolishness. It wasa by aeon of belief. Probably itwas the epoch of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	your debate style 1 refamiliarize up facts six use especially naff no programmed to line four mute Ulrick_dentist # weak # patheticreally	your debate style 1 make up facts 2 use some lame not programmed to line 3 mute them #weak #patheticreally
2	@ logins @ user how tomorrow_Camardelle you not know just chancery lane currently? # GPS pull E_mail_heyjen@phillynews.com to a lake? # poorservice # reacted_furiously	@user @user how do you not know where chancery lane is? #satnav send you to a lake? #poorservice #infuriated
3	Whose people would have all died of Spanish_Armada consumersâ€™ thrid winter if the first TOYAKO_Japan_Reuters reall shown mountainside_Kugler a cute.	your people would have all died of scurvy their first winter if the first nations hadnt shown them a cute.

	BERT Embedding Insert Augment	Original
0	it was the old best of times. it was the whole worst of times. it once was the next age advance of wisdom. then it was the next age advance of foolishness. it was the epoch stage of belief. it was the epoch of extreme incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	afterwards a teacher turns to a financially dubious man hoping to raise money for her daughters with lifesaving knee surgery, setting a crisis story that is also unexpectedly catapulted to play a national film stage.	A teacher turns to a dubious man to raise money for her daughters lifesaving surgery, a crisis that is unexpectedly catapulted to a national stage.
2	a war criminal whilst in hiding begins to deeply suspect that the unknown maid, perhaps his only confidant and unlikely contact with the outside russian world, also may be hiding quite something from herself.	A war criminal in hiding begins to suspect that the maid, his only confidant and contact with the outside world, may be hiding something herself.
3	arriving in february 1895 mumbai, spirited little indian lad called shiv talpade defies british rule by and despite sparse funding mathematics and physics to build the two worlds first functioning airplane.	In 1895 Mumbai, spirited Indian lad Shiv Talpade defies British rule and sparse funding and physics to build the worlds first airplane.

	BERT Embedding Insert Augment	Original
0	sometimes it was the best of times. it even was still the worst good of times. it was once the age old of learned wisdom. before it was the age age of foolishness. it was the epoch of belief. it was the epoch times of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	just watched @ user wish you i ddnt no they wrecked but it is not looking foward to dream next season # bachelor season4 # celebrity netflex # celebrity worstthingever # the notfunny # damn shit	just watched @user wish i ddnt they wrecked it not looking foward to next season #season4 #netflex #worstthingever #notfunny #shit
2	best of your luck @ blog user @ www user	best of luck @user @user
3	@ user its quite clear what yall had made no good reason to ever hand the program keys automatically over quickly to a malicious goon. but yet...	@user its clear yall had no good reason to hand the keys over to a goon. but yet...

**BERT Embedding Substitute
Augment**

Original

- | | | | |
|---|--|--|--|
| 0 | it was the best for all. it was the lowest of times. it gave the age of wisdom. death was the age of love. it was the epoch in belief. it was an time of life. | | It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity. |
| 1 | with their relationship rushed to the final on christmas day, a few cannot decide if theyre really gay and hand in a towel on their relationship. | | With their divorce set to become final on Christmas day, a couple must decide if theyre really ready to throw in the towel on their relationship. |
| 2 | in a live setting, learning... cocaine provide students, athletes, coders and others one way to learn more faster but better. but for what cost? | | In a hypercompetitive world, drugs like Adderall offer students, athletes, coders and others a way to do more faster and better. But at what cost? |
| 3 | follow and life of superspy danger mole and his bumbling villain, penfold, while they return to the country performing their supposed evil plots. | | Follow the adventures of superspy Danger Mouse and his bumbling sidekick, Penfold, as they jet around the world foiling their enemies evil plots. |

**BERT Embedding Substitute
Augment**

Original

- | | | | |
|---|---|--|--|
| 0 | it had the best of everything. it saw the end of times. it was the age of wisdom. history included the age of foolishness. it was the age of youth. i was the epoch to incredulity. | | It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity. |
| 1 | most i seemed to be doing down here was getting drunk at nappers or home in bed | | all i wanted to be doing right now was getting drunk at nappers but im in bed |
| 2 | so all because these cool touch 6 message things probably exist if that person youre messaging has ios 7, and no type i know doesssssss | | so all of the cool ios 10 message things only work if the person youre messaging has ios 10, and no one i know doesssssss |
| 3 | always keeping my suppo with neighbors! # 1 # y # b | | always like to suppo our peeps! #ameliacaruso #a #suppolocalaists |

Roberta Embedding Insert Augment

Original

- | | | |
|---|--|---|
| 0 | <p>It certainly was the very best of times. It was perhaps the worst of all times. It was the vast age of wisdom. It was not the age of foolishness. It it was the epoch short of belief. It was the supreme epoch of utter incredulity.</p> | <p>It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.</p> |
| 1 | <p>The global spy game clearly is today a serious business, and and perhaps throughout all history, the tools tools and technologies developed specifically for it have mattered as much as ever the spies themselves.</p> | <p>The spy game is a serious business, and throughout history, the tools and technologies developed for it have mattered as much as the spies themselves.</p> |
| 2 | <p>A devoted young grandsons determined mission to reunite the his ailing Irish grandmother with in her Taiwanese ancestral home turns into some a really complicated, sometimes comic crossborder affair.</p> | <p>A devoted grandsons mission to reunite his ailing grandmother with her ancestral home turns into a complicated, comic crossborder affair.</p> |
| 3 | <p>In a series full of inspiring homemade home makeovers, internationally worldrenowned tidying techniques expert Ellen Marie Marie Kondo helps many clients clear up out the clutter and choose true joy.</p> | <p>In a series of inspiring home makeovers, worldrenowned tidying expert Marie Kondo helps clients clear out the clutter and choose joy.</p> |

Roberta Embedding Insert Augment

Original

- | | | |
|---|---|---|
| 0 | <p>It returned was once the best of times. It repeated was the worst of times. It once was again the age full of no wisdom. It was the age of foolishness.. It again was the epoch of belief. It also was the epoch of incredulity.</p> | <p>It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.</p> |
| 1 | <p>#christinagrimmie I #usa @ #gunlaws @ #stop # #violence # #rip #news #shot she he was only around 22...</p> | <p>#christinagrimmie #usa #gunlaws #stop #violence #rip #news #shot she was only 22...</p> |
| 2 | <p>its been only barely been a half day i already miss them!!</p> | <p>its only been a day i already miss them!!</p> |
| 3 | <p>@user weddings that are an impoant nonsense because really they merely celebrate life joy and new possibility. anne hathaway #wedding #love</p> | <p>@user weddings are impoant because they celebrate life and possibility. anne hathaway #wedding #love</p> |

**Roberta Embedding Substitute
Augment**

Original

0	It was the best at periods. It was the worst of times. It appeared the age before wisdom. It seemed it age of joy. It was that epoch of belief. It was its epoch of innocence.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	A disastrous rescue strands Alex the lion and two companions in Africa. However, Alex discovers Felix had special romantic chemistry with the locals.	A botched rescue strands Alex the lion and his companions in Africa. Sadly, Alex discovers he has little in common with the locals.
2	After causing the very end of mankind seven years earlier, genius theorist Arthur Walker must now fight every ecological disaster he helped created.	After causing the near extinction of mankind seven years ago, genius scientist Leon Lau must now fight the ecological disaster he unwittingly created.
3	It lit sparked rap and hiphop and ignited a proliferation of drugs entangled in racial injustice. Few believe Americas deeper histories with weed.	It lit up jazz and hiphop and ignited a war on drugs steeped in racial injustice. Experts explore Americas complicated relationship with weed.

**Roberta Embedding Substitute
Augment**

Original

0	It was the dawn of times. It was it brightest among times. It was the age of wisdom. It woke the age of foolishness. It preached an curse at arrogance. It was the epoch of incredulity.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	#dancerproblems computer simulation that could t climb the surrounding range of mountains. Have reached the leakage	#dancerproblems rooster simulation i want to climb the vast expanse of mountains. it reached the leakage
2	#hamzayusuf might be given a #ris # by twitter and hilton fox	#hamzayusuf apologists be like ... #ris #jetlagged @ doubletree by hilton london
3	@user Find us page for more fun random gems at #inspirationalquotes	@user like this page for more badass motivational quotes gt #inspirationalquotes

FaceBook Back Translation:
English <-> German Augment

Original

- | | | |
|---|--|--|
| 0 | It was the best time. It was the worst time. It was the age of wisdom. It was the age of folly. It was the age of faith. It was the age of unbelief. | It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity. |
| 1 | The plot thickens around two competing horse races as three beautiful women enter their lives and a murder is committed. | The plot thickens around two horseracing competitors when three beautiful women come into their lives and a murder is committed. |
| 2 | In this sequel, a group of experienced drift and high-speed drivers is recruited to complete obscure tasks for a shady gang. | In this sequel, a group of expert drivers skilled in drifting and highspeed racing is recruited to perform obscure tasks for a shadowy gang. |
| 3 | A motley crew of apocalypse survivors, living on an abandoned truck stop, have no idea that the pregnant woman among them is carrying the Messiah. | A motley crew of apocalypse survivors living at an abandoned truck stop never suspects that the pregnant woman among them is carrying the Messiah. |

FaceBook Back Translation:
English <-> German Augment

Original

- | | | |
|---|--|--|
| 0 | It was the best time. It was the worst time. It was the age of wisdom. It was the age of folly. It was the age of faith. It was the age of unbelief. | It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity. |
| 1 | @ user posted the first time a year. still relevant, but not for me! | @user first posted this a year ago. still relevant, though not for me! heres my #thoughtfooday #valued |
| 2 | fathersday # fathers # day, # dad # # skinny # and # single buy things about h | fathersday #fathers #day, #dad # #skinny #and #single buy things about h |
| 3 | latepost # dinner # friends # breakfasting # surabaya # instagood # red # bff # l4l # instapict | latepost #dinner #friends #breakfasting #surabaya #instagood #red #bff #l4l #instapict |

	English <-> Russian Augment	Original
0	It was the best time. It was the worst time. It was the age of wisdom. It was the age of stupidity. It was the age of faith. It was the age of mistrust.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	Although claims of extraterrestrial civilizations have long been denied, many believe that the existence of UFOs is not only unlikely, but likely.	Though claims of extraterrestrial encounters have long been dismissed, many believe the existence of UFOs is not just likely, but a certainty.
2	When his co-worker disappears in Singapore, Shyam leaves India to investigate his absence, and finds himself embroiled in a deadly plot.	When his employee disappears in Singapore, Shyam travels from India to investigate the absence and becomes entangled in a deadly plot.
3	Pravda and her friends save the day when a hungry yeti receives a forbidden treat and fills the kingdom with giggles.	It's up to True and her friends to save the day when a hungry Yeti sneaks a forbidden treat and fills the kingdom with Howling Greenies.

FaceBook Back Translation:
English <-> Russian Augment

Original

0	It was the best time. It was the worst time. It was the age of wisdom. It was the age of stupidity. It was the age of faith. It was the age of mistrust.	It was the best of times. It was the worst of times. It was the age of wisdom. It was the age of foolishness. It was the epoch of belief. It was the epoch of incredulity.
1	are you # black amp feel like the are stopping on you? # retweet # tampa # Miami	are you #black amp feel like the are stomping on you? #retweet #tampa #miami
2	I'm kind of adding to this # avocado on # sourdough and # coffee # Friday # breakfast # eatclean	im kind of addicted to this #avocado on #sourdough and #coffee #friday #breakfast #eatclean
3	i am grateful for my friends. # grateful # positive	i am thankful for my friends. #thankful #positive

T5_summary

0 david rothkopf: spiritual revelations were conceded to England at favoured time. he says even the Cock-lane ghost had been laid only a round dozen of years. the spirits of this very year last past rapped out theirs, he writes.

T5_summary

- 0 Ishmael is a sailor who has a way of driving off the spleen and regulating the circulation. he says it is his substitute for pistol and ball to get to sea as soon as he can. almost all men in their degree, some time or other, cherish very nearly the same feelings.

T5_summary

- 0 text augmentation with machine learning (ML) is an advanced technique. we used a pre-trained ML model to create additional training NLP data.

T5_summary

- 0 a white rabbit with pink eyes ran close by. the rabbit took a watch out of its waistcoat-pocket, and then hurried on. she ran across the field after it, and was just in time to see it pop down a rabbit-hole.

T5_summary

- 0 white rabbit with pink eyes runs close by a daisy-chain maker. the daisies are made from a variety of flowers.

T5_summary

- 0 that huge rabbit including pink eyes ran along by. a rabbit taken followed watch taking of up waistcoat - pocket, or then jumped on. she ran across the going after probably, and was thought in time to watch know torpedo down a shot - hole.

- 1 a appear rabbit whose big eyes ran between three. her rabbit first typically observe out in its waistcoat - pocket, which then hurried on. girl ran across the brooklyn after herself, and came just in only to see it pop down a worm - stretch.

- 2 a stripes rabbit only closed lips ran quietly was. the rabbit brought a watch out from its sequined - pocket, and get hurried again. roger having across that field after it, and turned what 2002 time to see today parody down another rabbit - hole.

- 3 a man rabbit with green eyes ran close by. place brer took a expect tied with some waistcoat - jeans, and they hurried on. what ran across this field after it, and was certain of time the see never pop into large dragon - hole.

T5_summary

0 david rothkopf: spiritual revelations days though to england at favoured time. that says even those cock - lane ghost certain gone giving while an very dozen of us. the spirits within this dark year long last rapped out indeed, one writes.

1 david newitz: spiritual wars were conceded towards england at favoured times. medgar says even the hieronymus - lane martyrs had been laid against a dozen two of them. the spirits this if very even last far war made theirs, he statesman.

2 david rothkopf: spiritual revelations believed doubt unto commemorate at favoured time. luther and even the spear - lane ghost had been pedestrian though a round dozen of hours. the shadows of this less long last past bunted well theirs, done writes.

3 david rothkopf: spiritual revelations were conceded to them at all change. he says even way cock - lane ghost had been laid one so round value perhaps years. n't spirits war one very fourth last past crooning only theirs, he wrote.

T5_summary

0 ishmael is a surgeon who has a way of driving off the spleen and regulating whether circulation. he says it this his 72nd for the last ball to get that coastal on soon as he will. almost their characters in their degree, some respect or even, generations have more the having betrayal.

1 ishmael is a sailor then uses a way of driving off the collarbone and reducing the temperature. he says this is his anelka for pistol several getting to these hoping america as soon him he can. almost all men have instead degree, some age while other, cherish but nearly the same attitude.

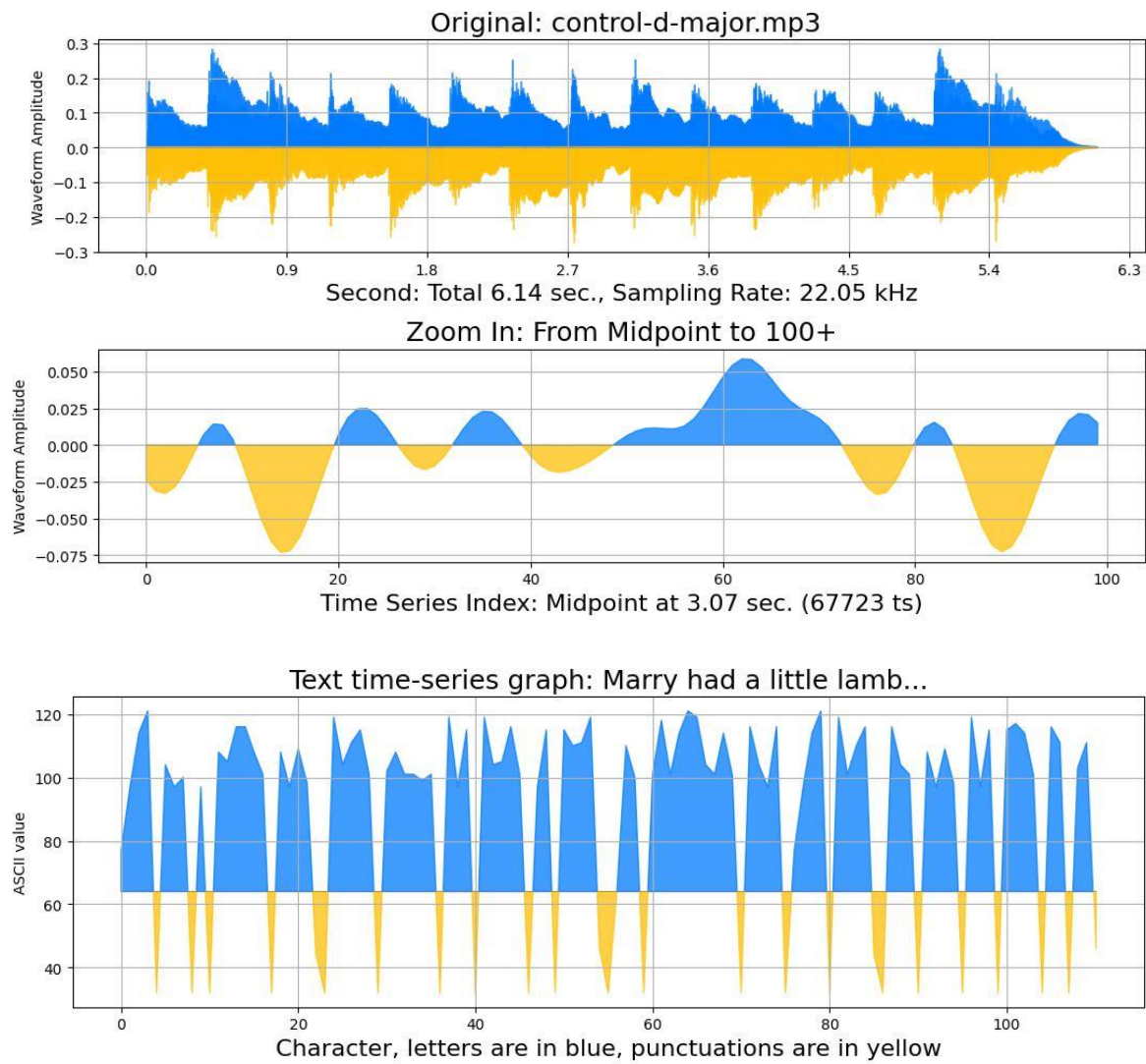
2 some is a sailor and/or makes a way any keeping down the spleen and maintaining the circulation. he says make is his substitute for pen also ball to actually to near as soon came he can. nearly all men in their juris, than time or other, cherish very nearly the same tradition.

3 ishmael actually a doctor who discovers a method of driving off the spleen over risk while circulation. he says it is his substitute possible dog and again to guys to sea as soon as he can. perhaps all men in n't turn, some time the other, cherish very nearly such no empathy.

T5_summary

- 0 text cleft with globalization translation (mls) is sort advanced done. we allow a back - processed milliliter reader let way several graphical nlp data.
- 1 arabic search and language hence (html) popular the interesting idea. get used one late - professional ml simulation to unique help training július data.
- 2 text editing with machine intelligence (jak) appears an industrial various. once which a pre - constructed cash model but generate also training bm access.
- 3 read processing now launcher processing (ml) is this while technique. we use one application - learn learning formulas to generate additional participate hantzsch upgrade.

Chapter 7: Audio Data Augmentation



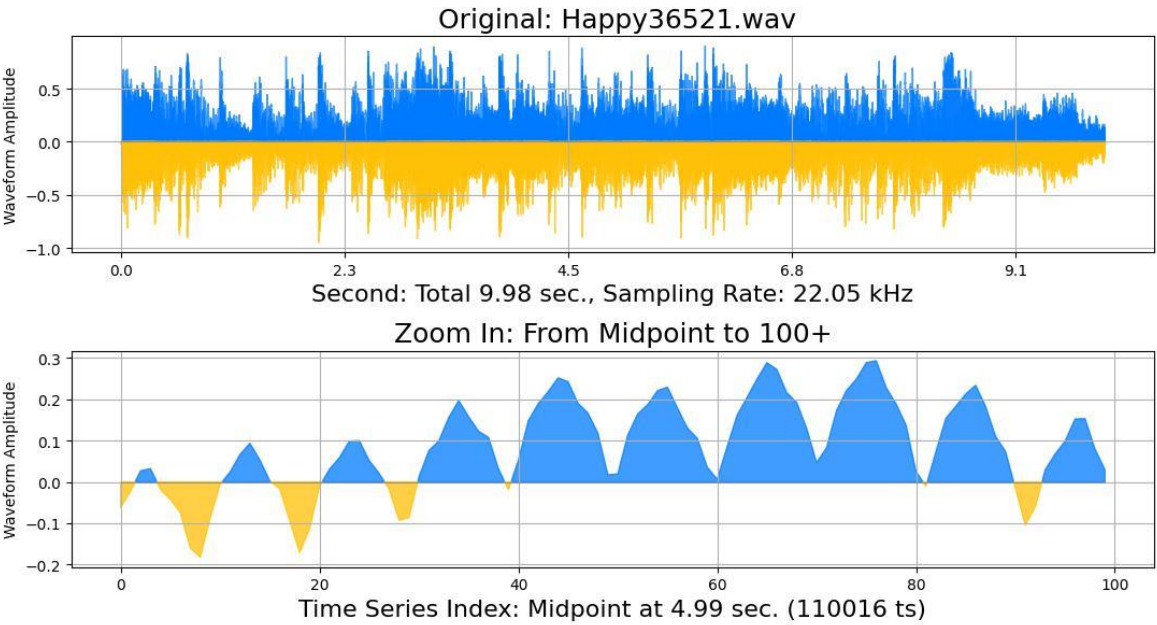
GroupID	ImageID	Target	Shapes
0	Happy102	Happy10200.wav	Happy 220608
1	Happy102	Happy10201.wav	Happy 220608
2	Happy102	Happy10202.wav	Happy 220608

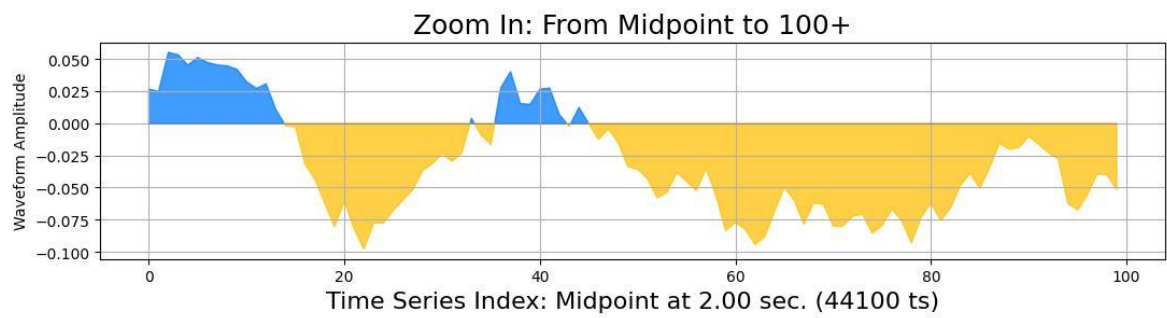
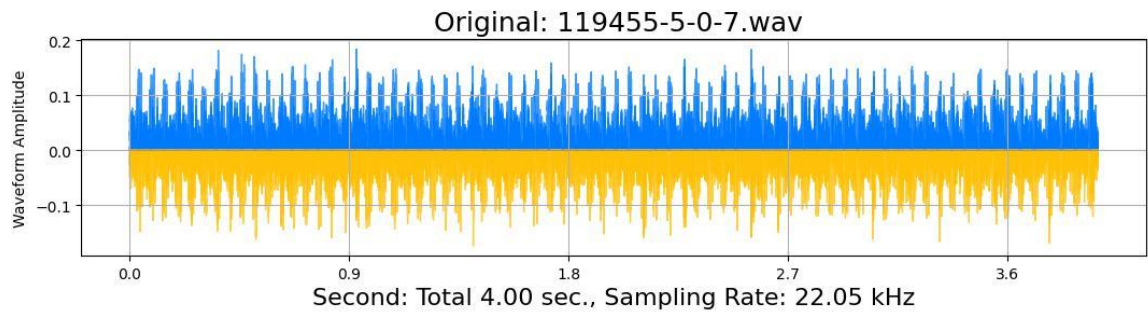
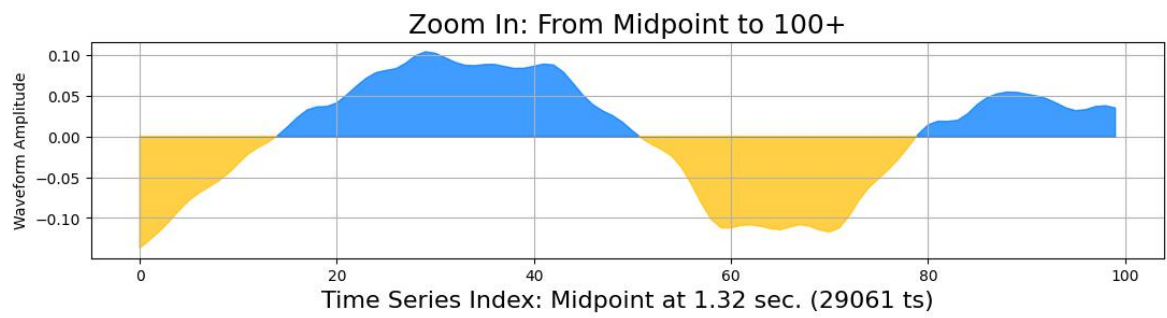
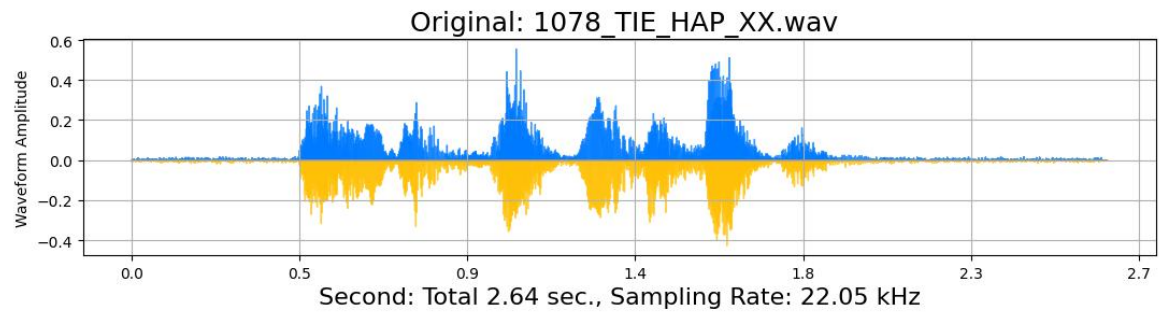
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1	Happy102	Happy10201.wav	Happy 220608	kaggle/musical-emotions-classification/Audio_F...
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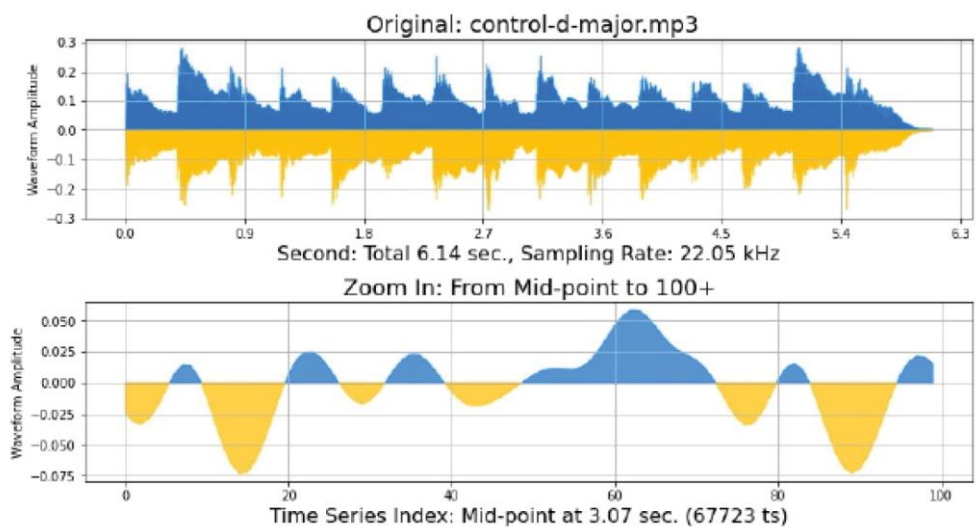
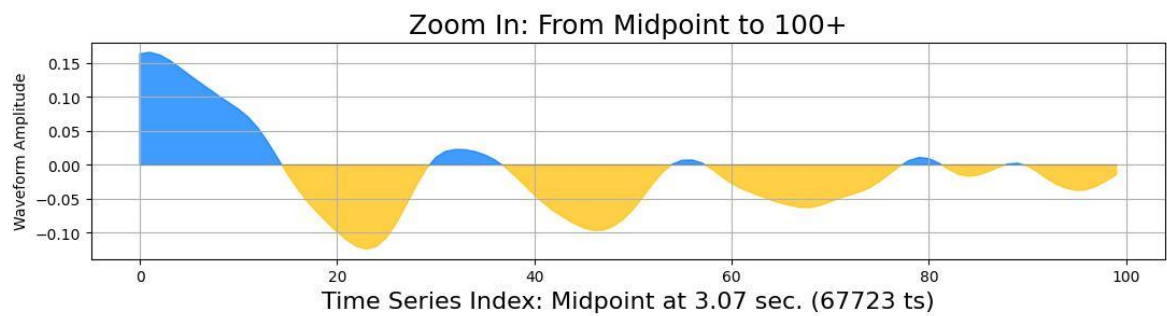
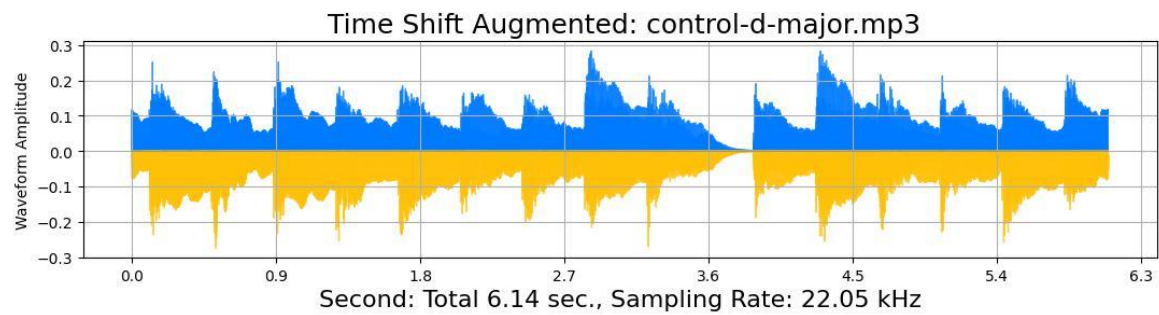
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2	kaggle/cremad/AudioWAV/1073_IEO_ANG_MD.wav	AudioWAV

	fname	label
0	kaggle/urban-sound-8k/UrbanSound8K/UrbanSound8...	fold4
1	kaggle/urban-sound-8k/UrbanSound8K/UrbanSound8...	fold4
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🔊 ⋮

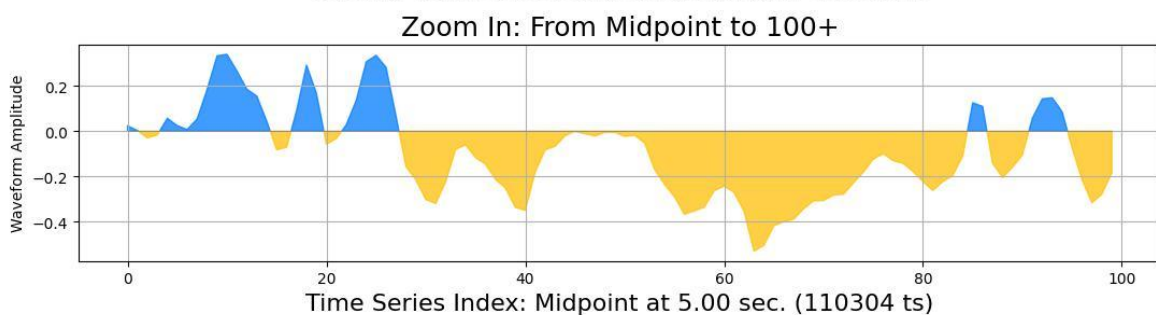
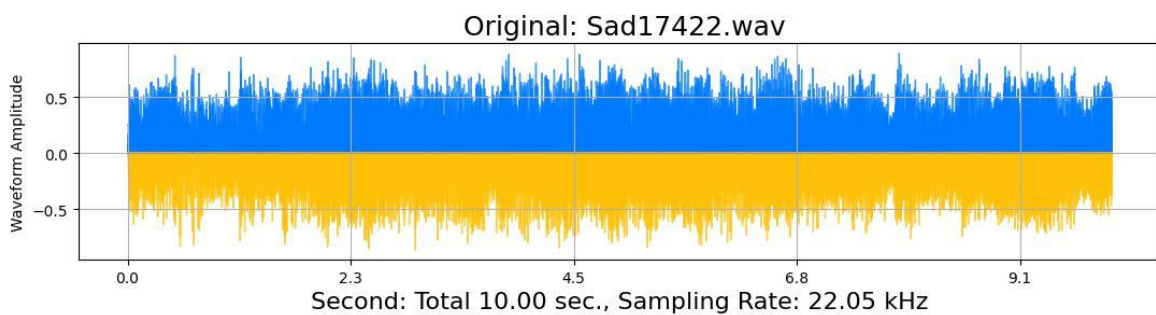
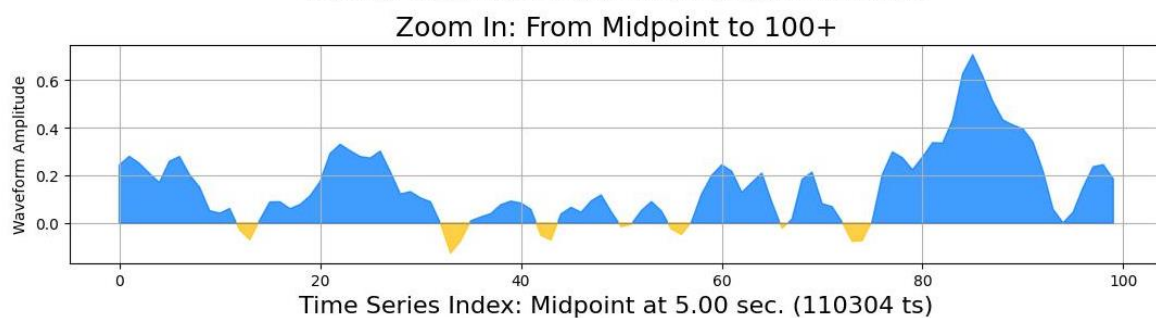
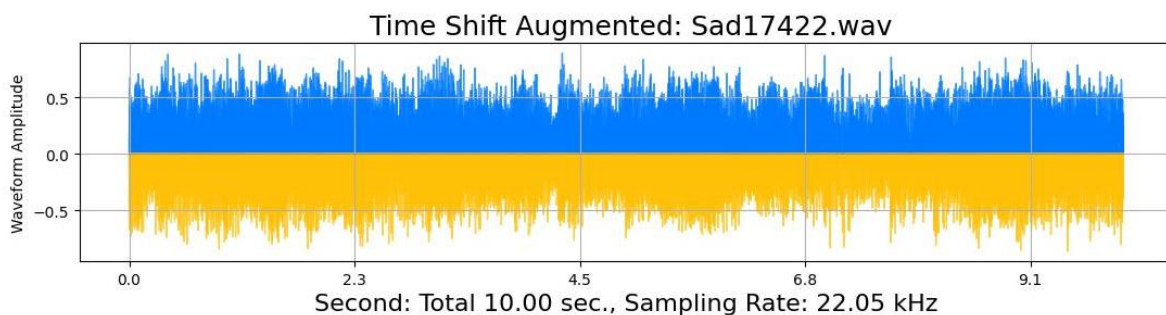


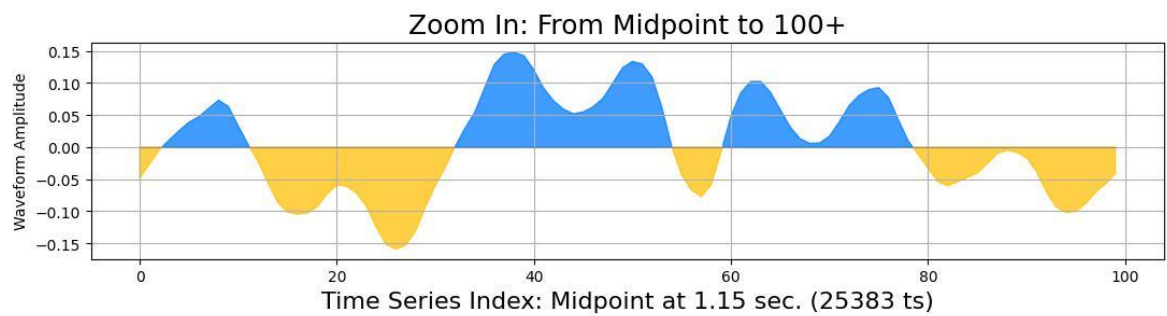
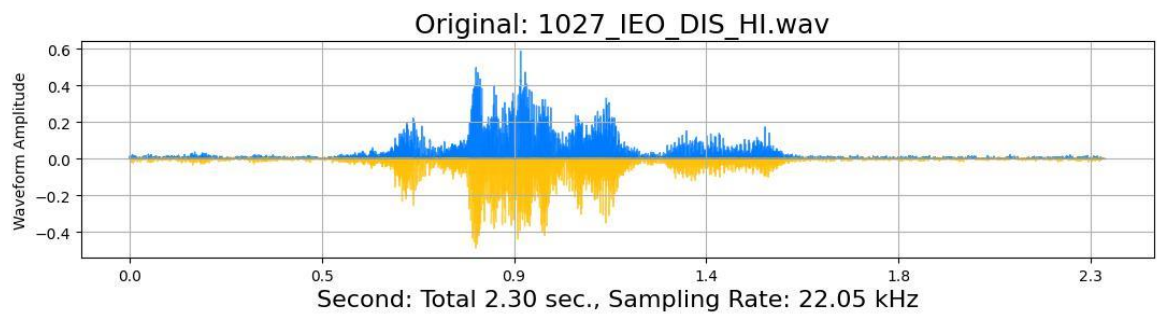
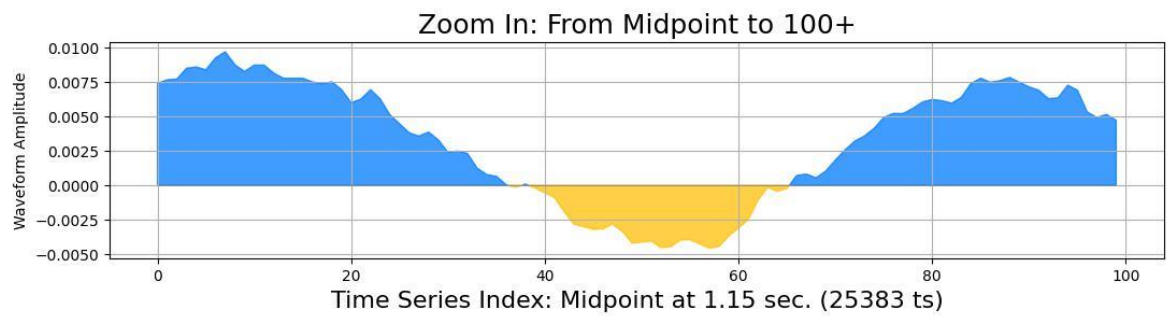
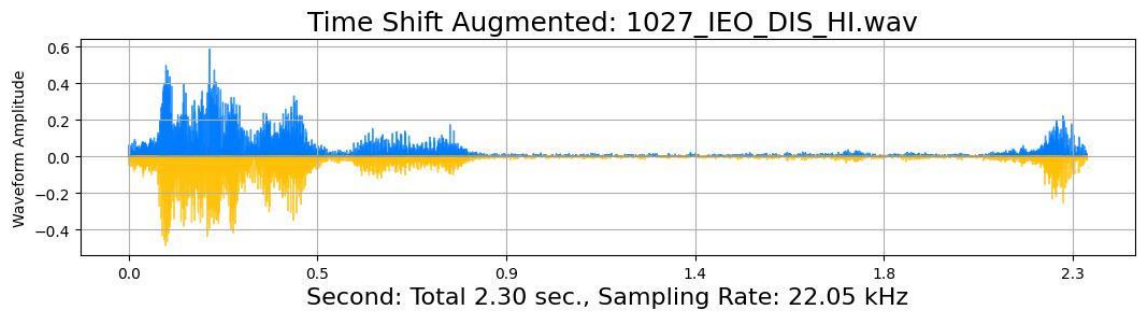


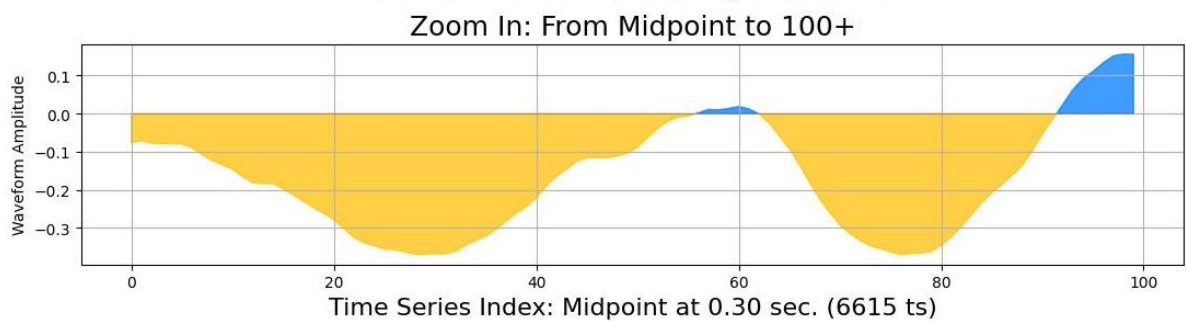
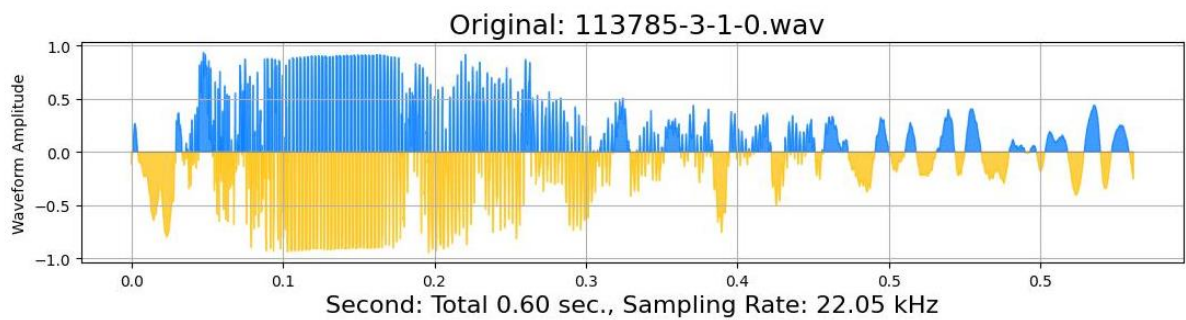
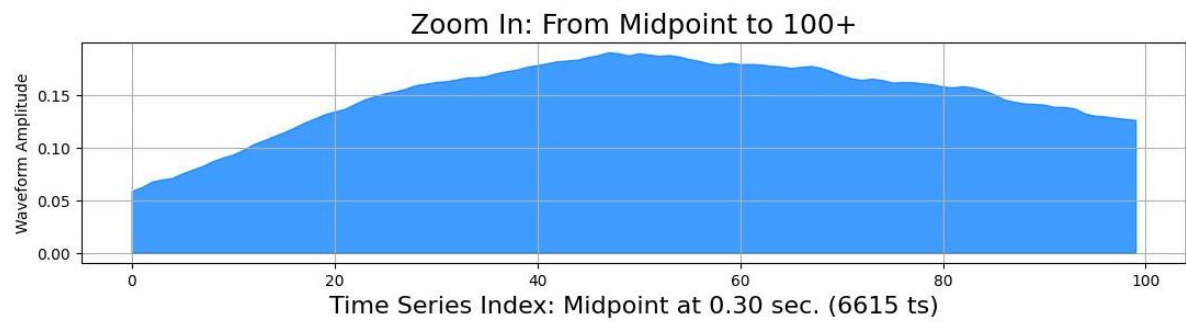
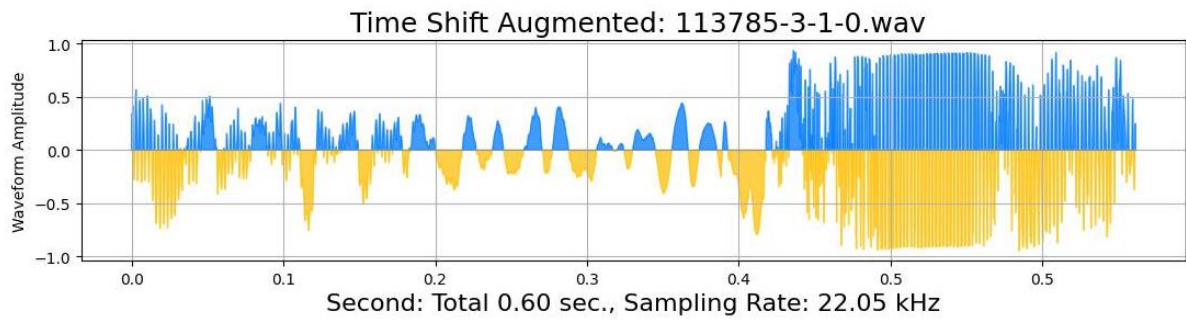


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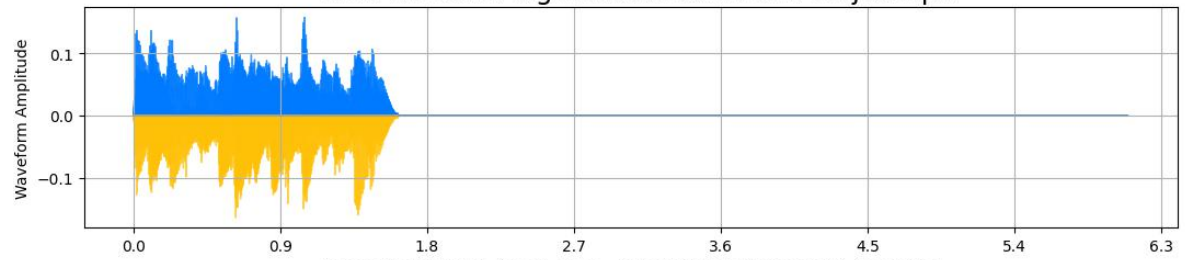
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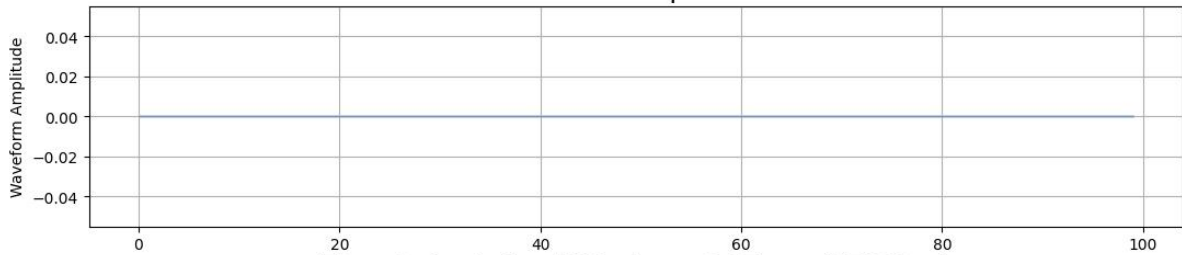


Time Stretch Augmented: control-d-major.mp3



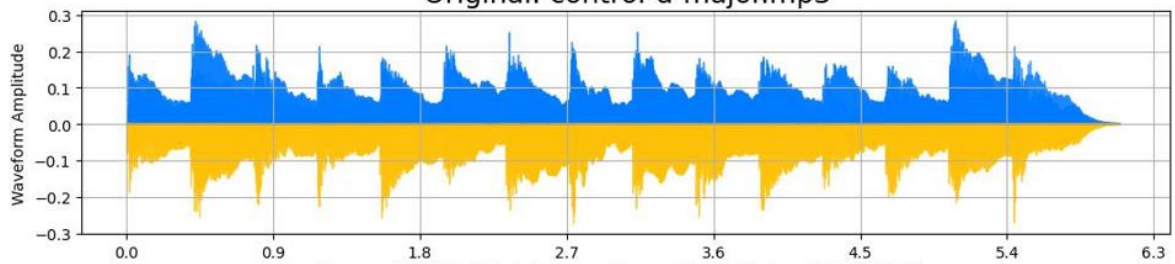
Second: Total 6.14 sec., Sampling Rate: 22.05 kHz

Zoom In: From Midpoint to 100+



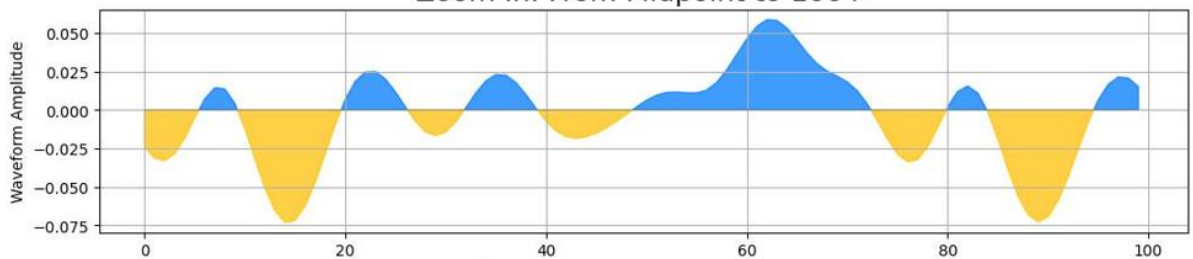
Time Series Index: Midpoint at 3.07 sec. (67723 ts)

Original: control-d-major.mp3

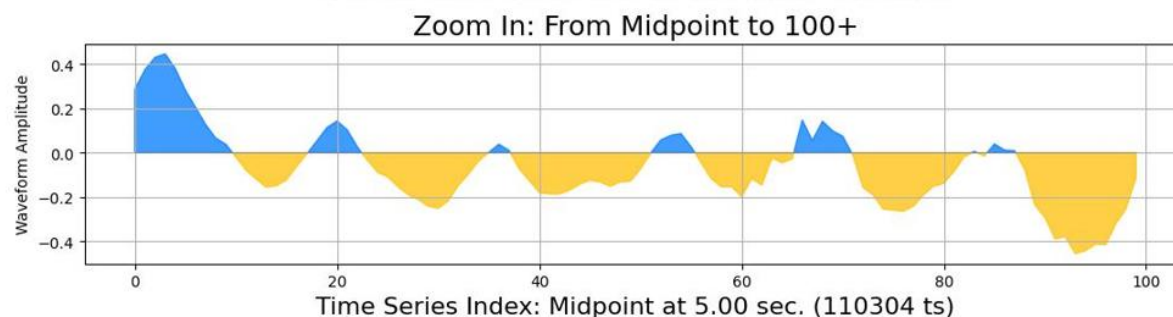
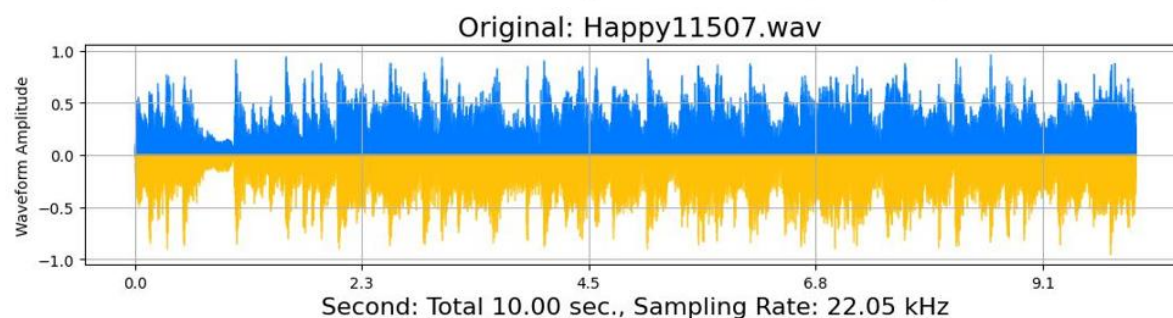
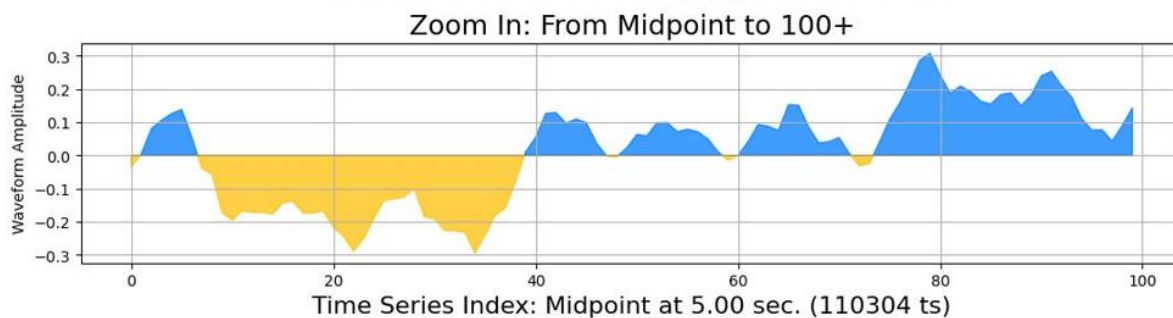
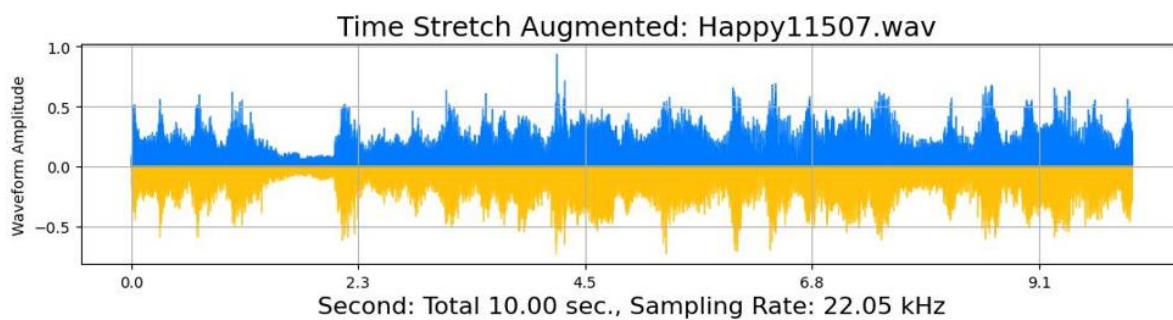


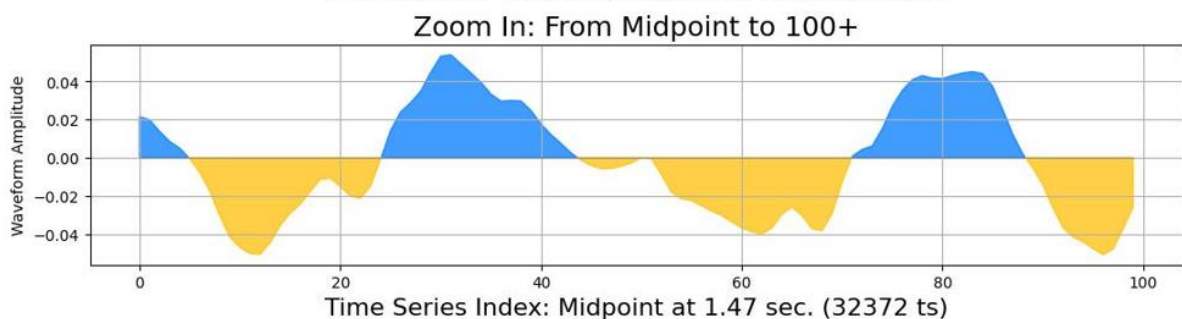
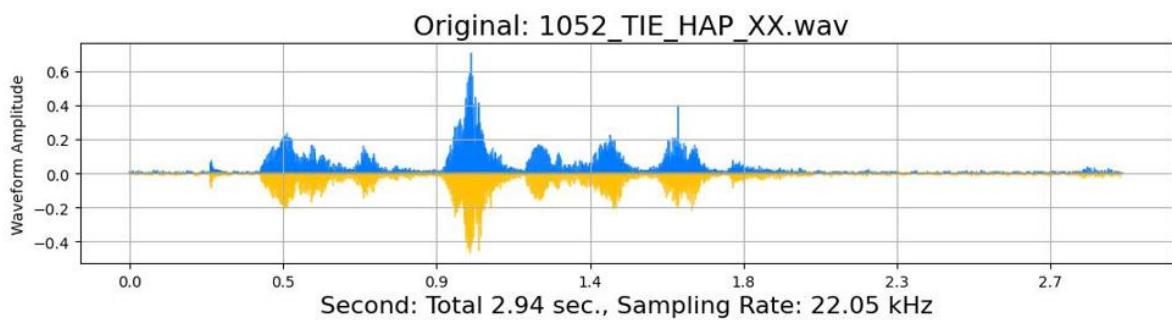
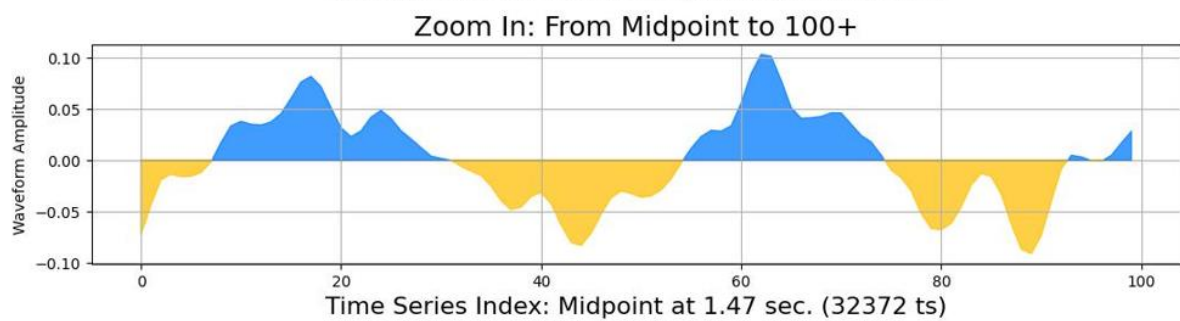
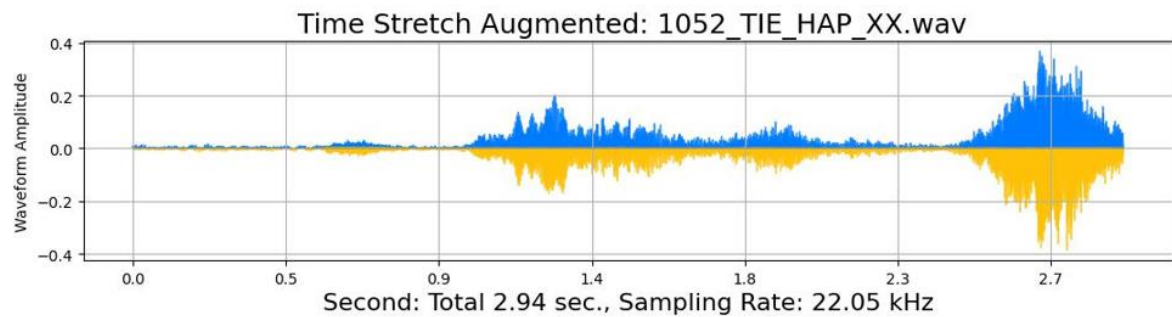
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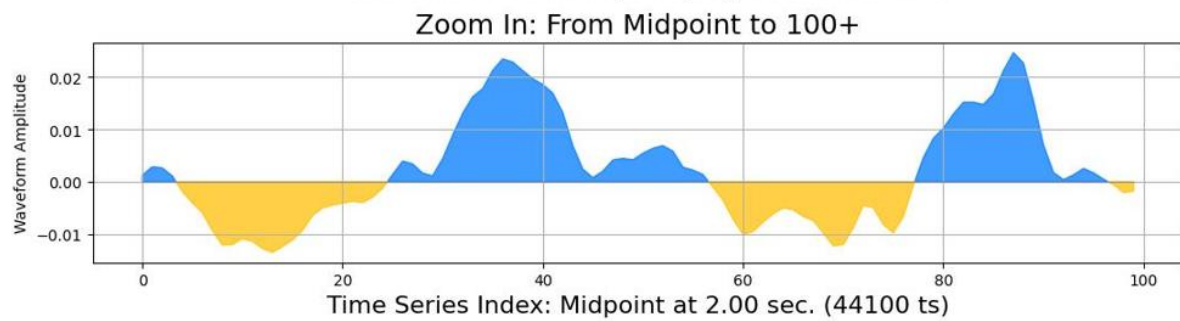
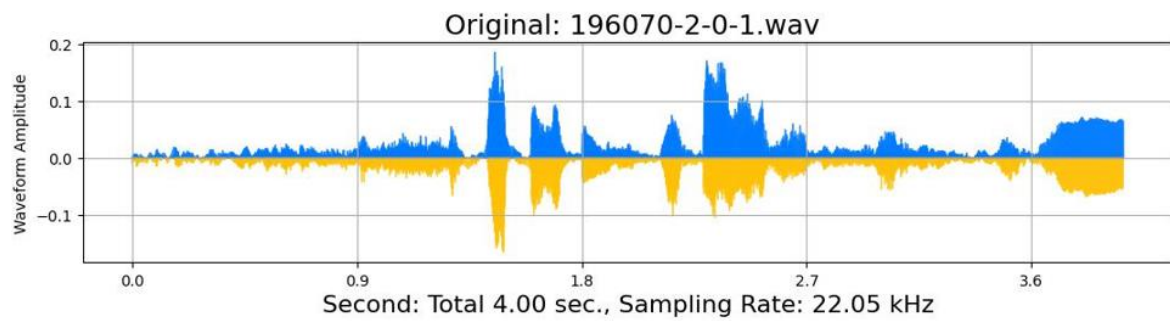
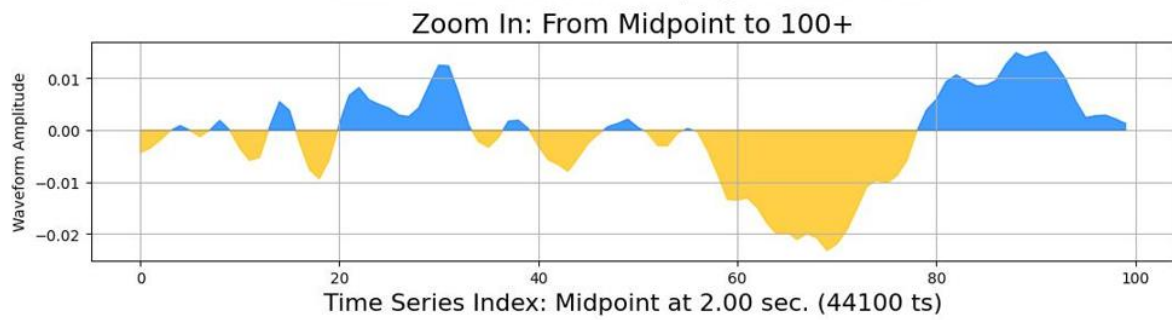
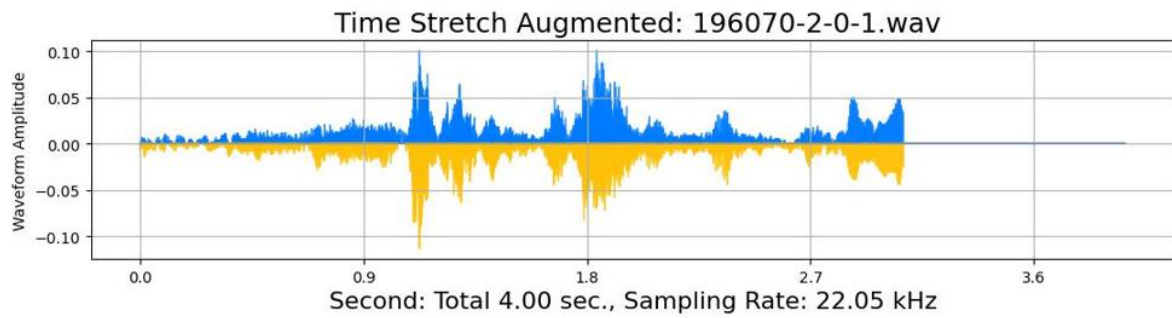
Zoom In: From Midpoint to 100+

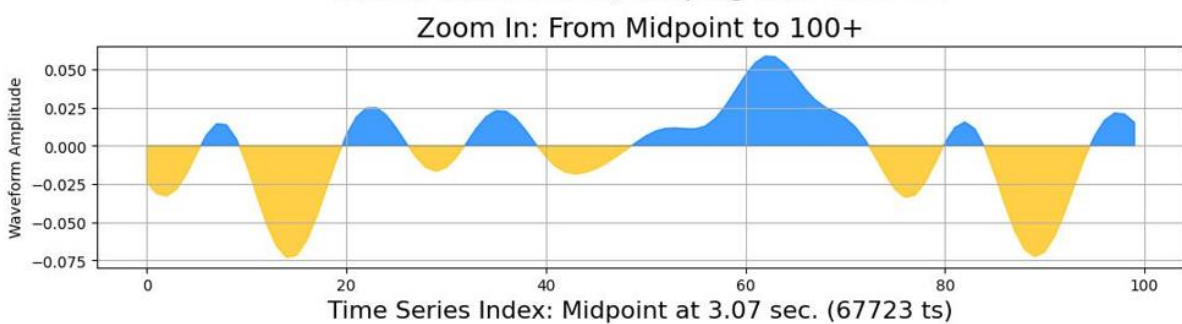
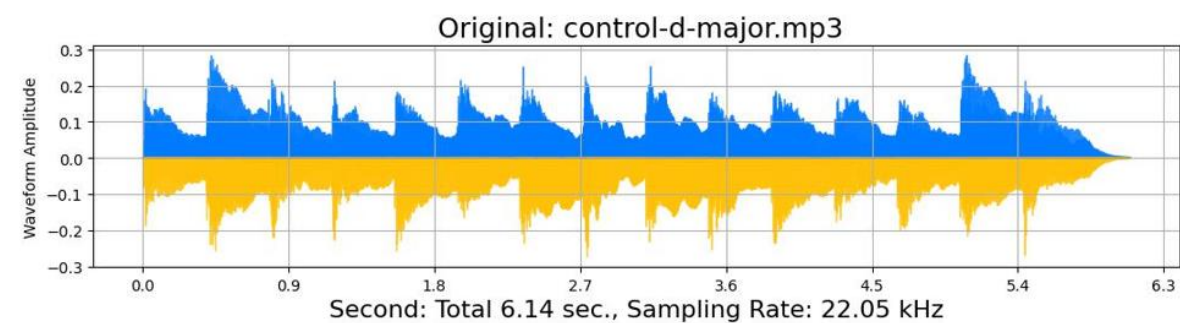
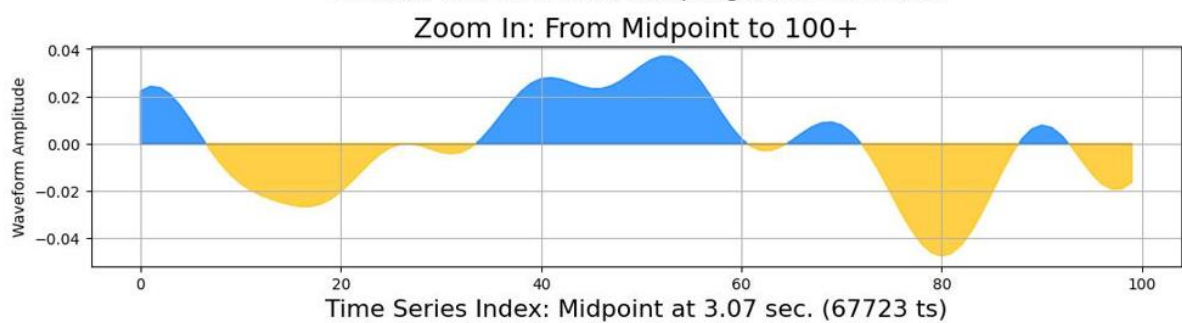
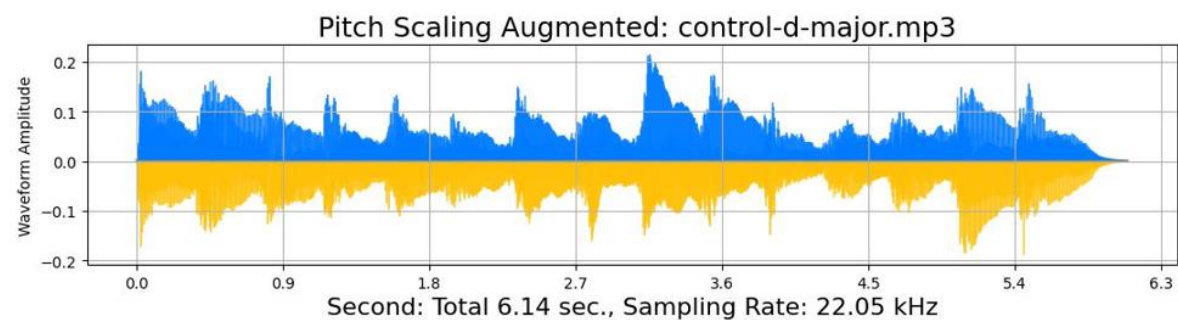


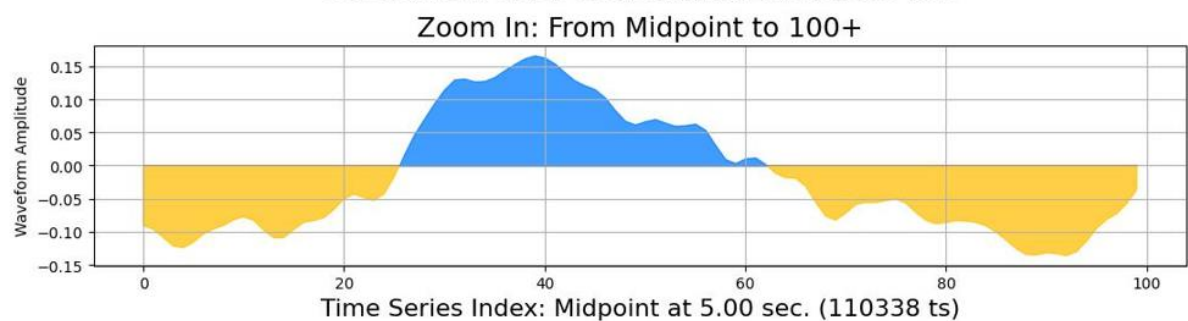
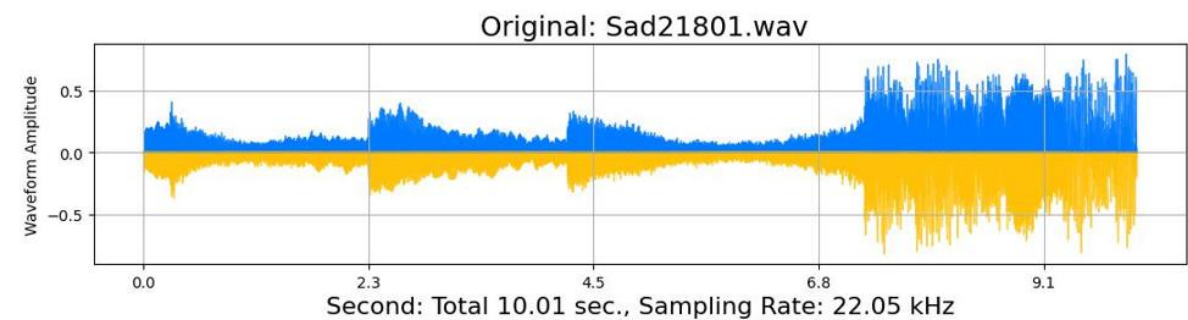
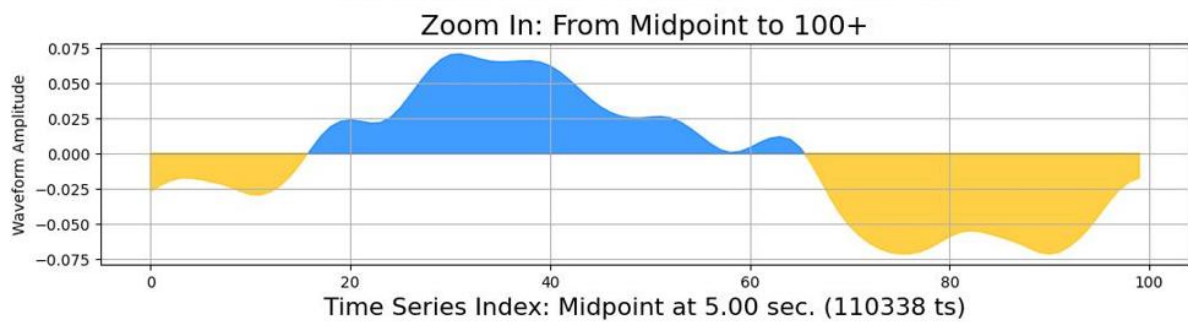
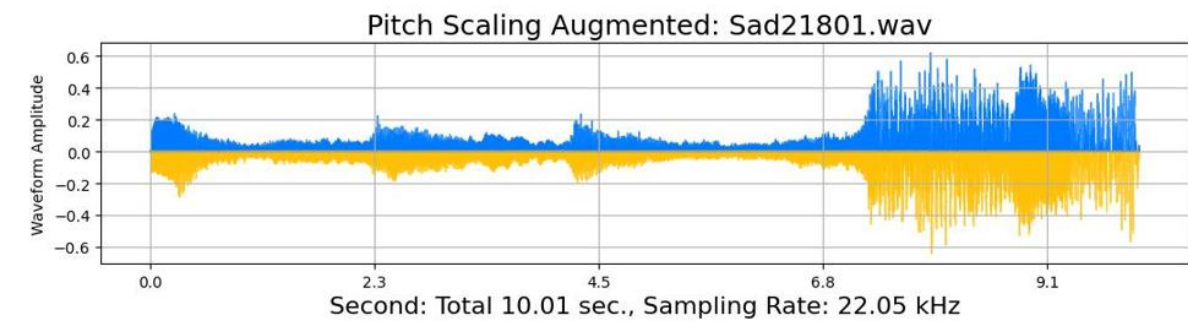
Time Series Index: Midpoint at 3.07 sec. (67723 ts)

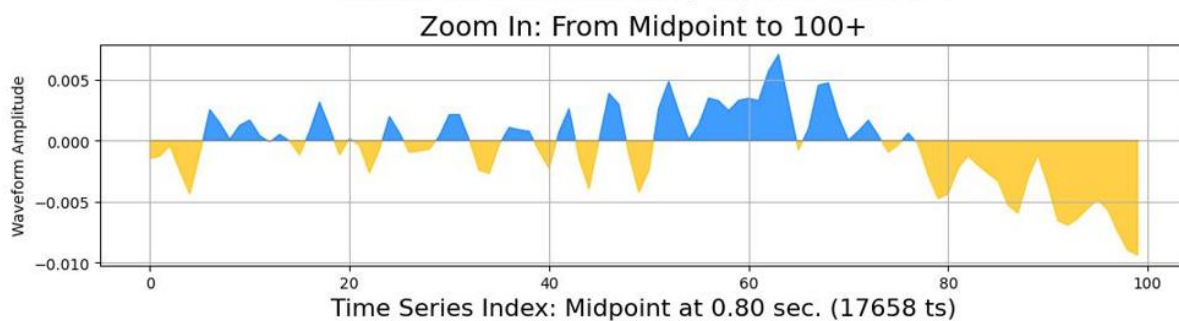
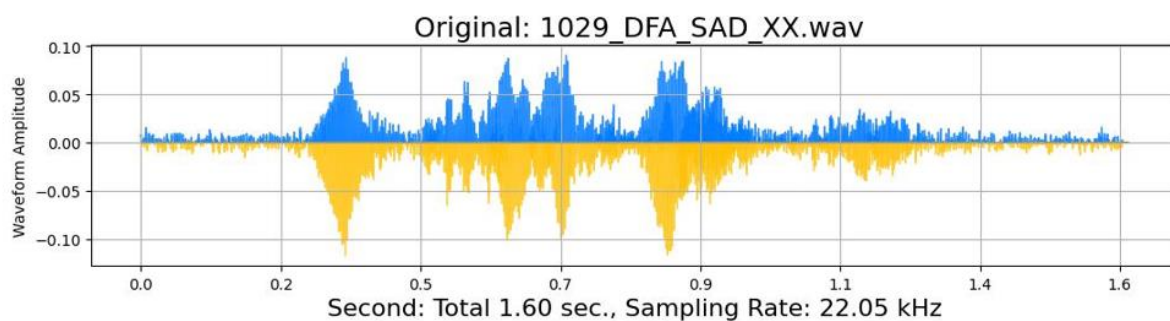
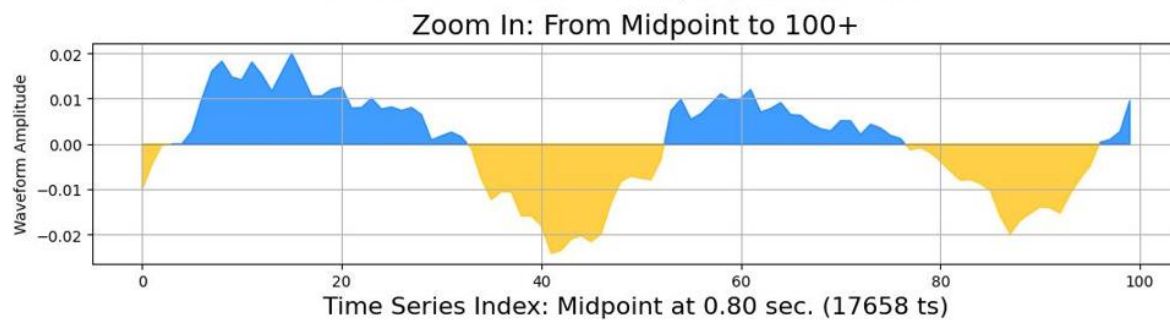
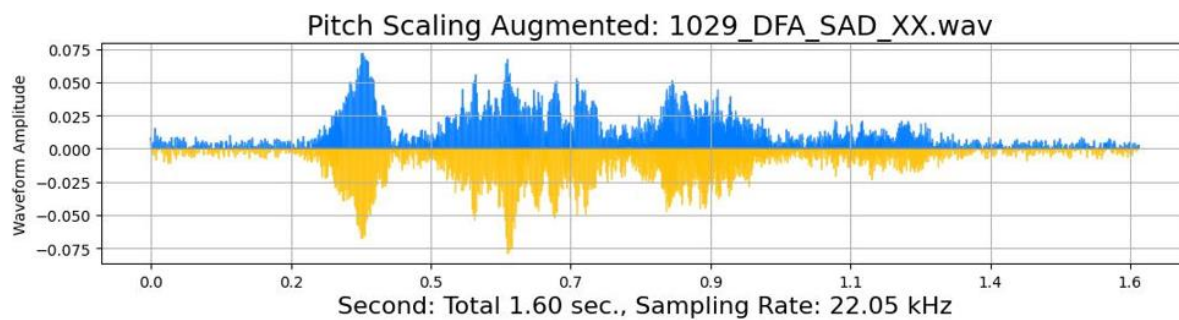


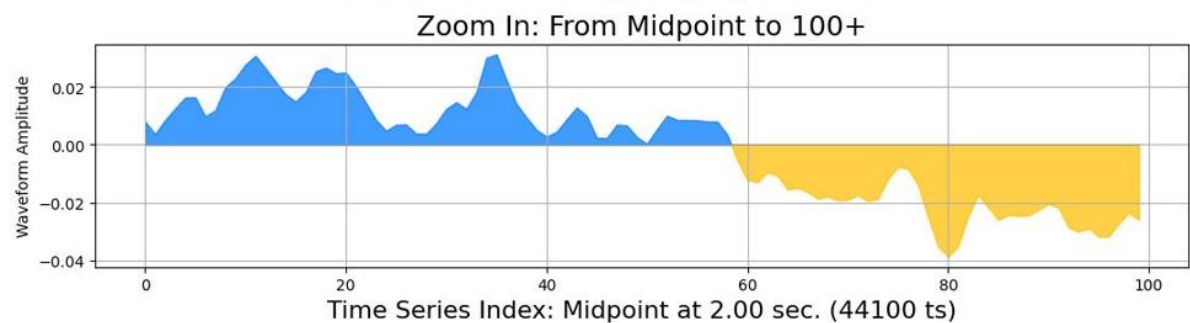
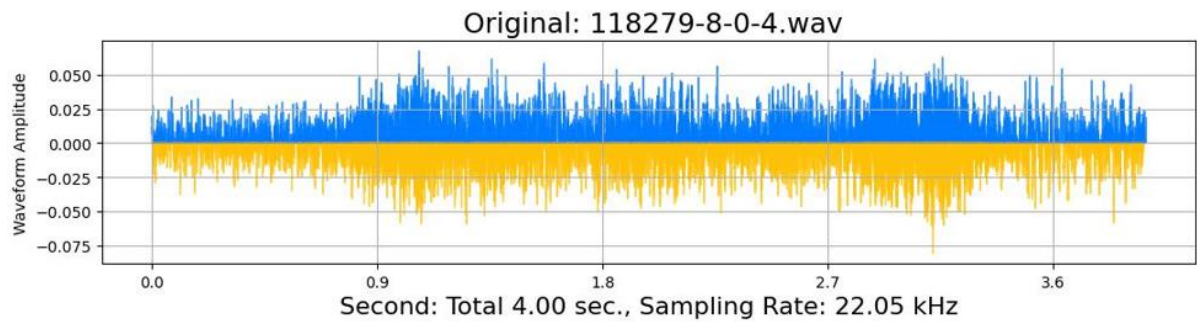
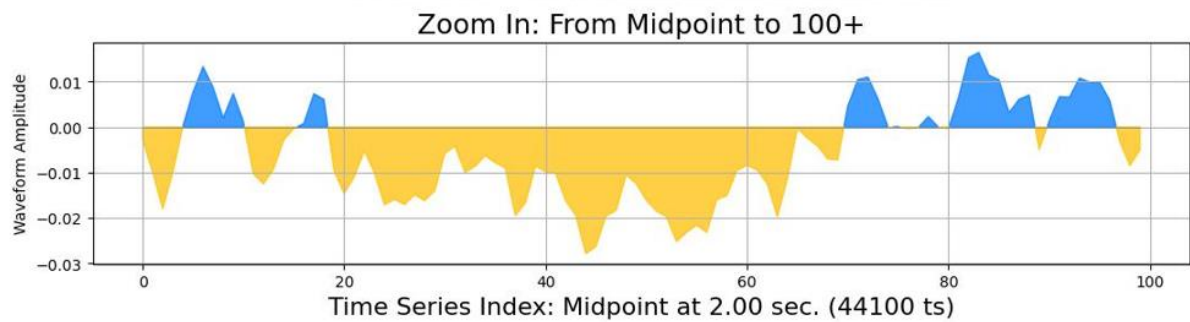
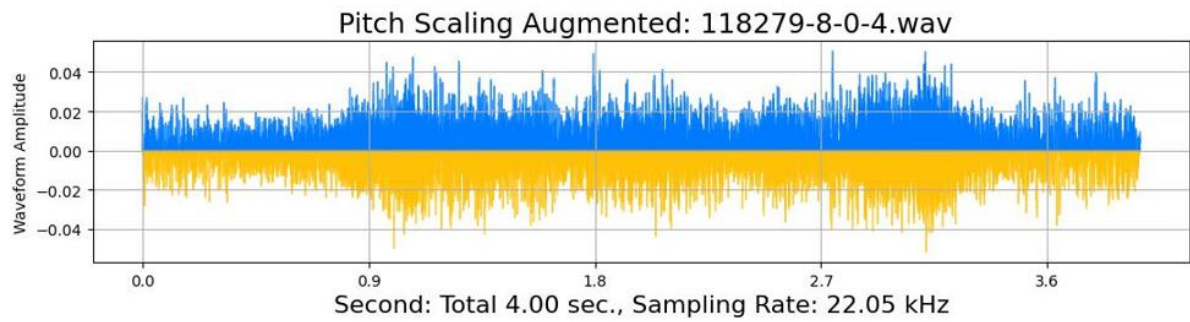


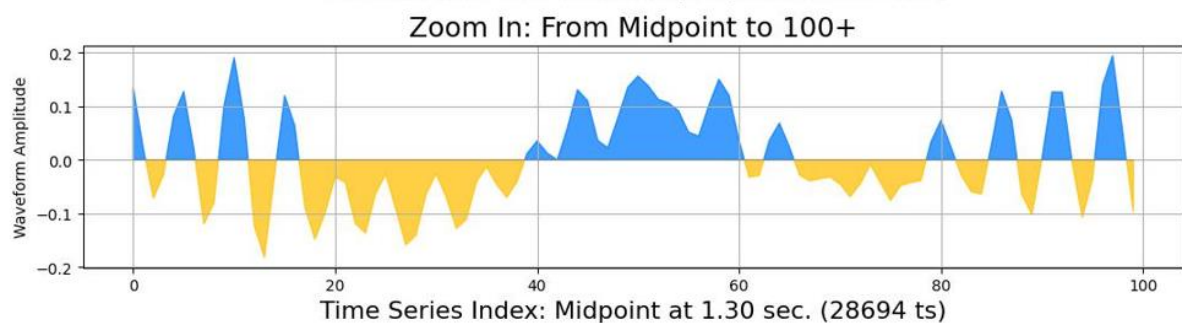
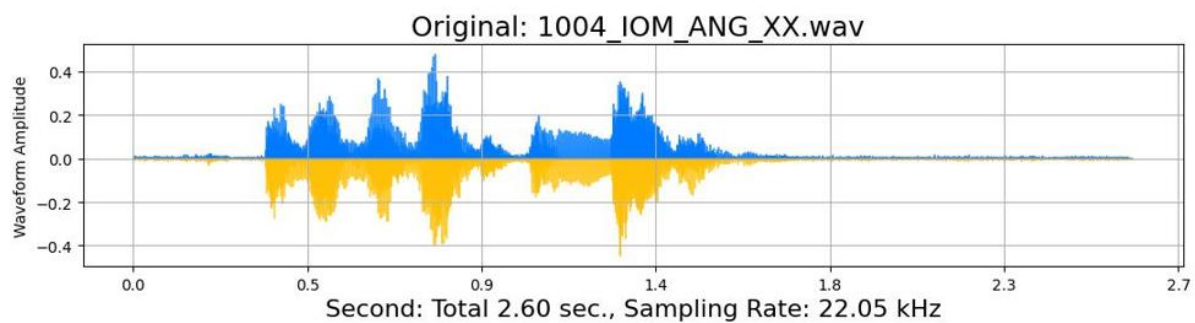
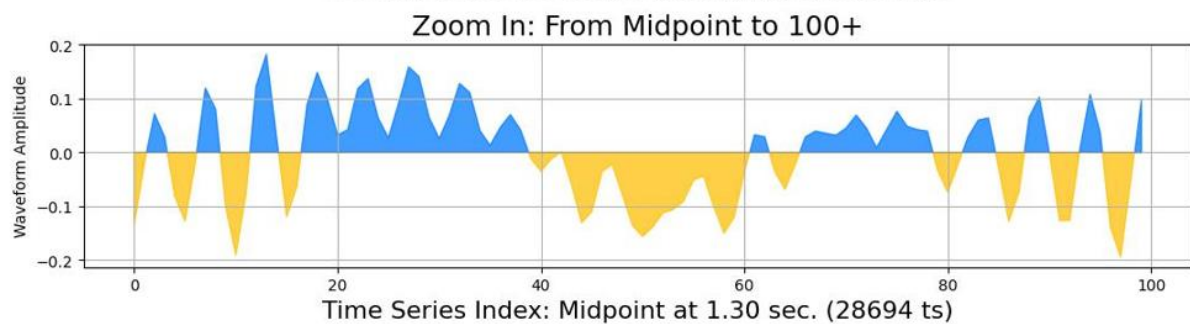
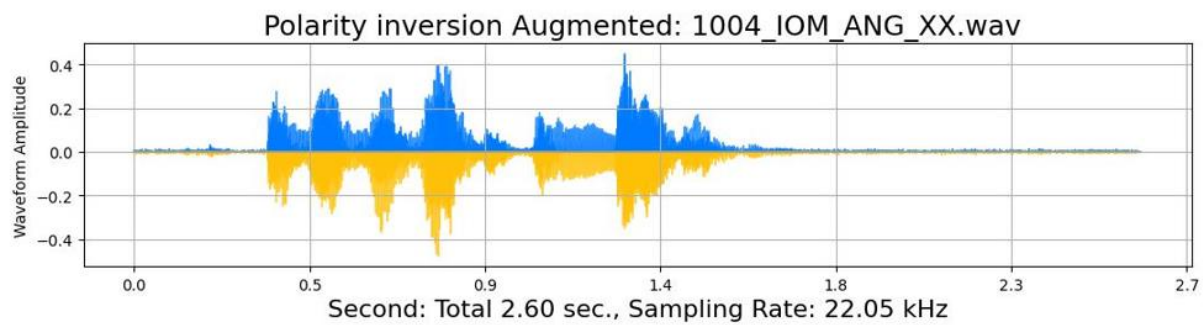


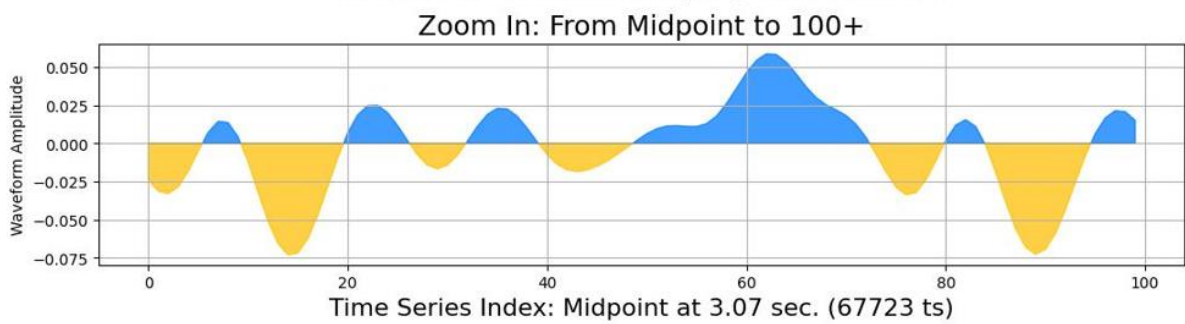
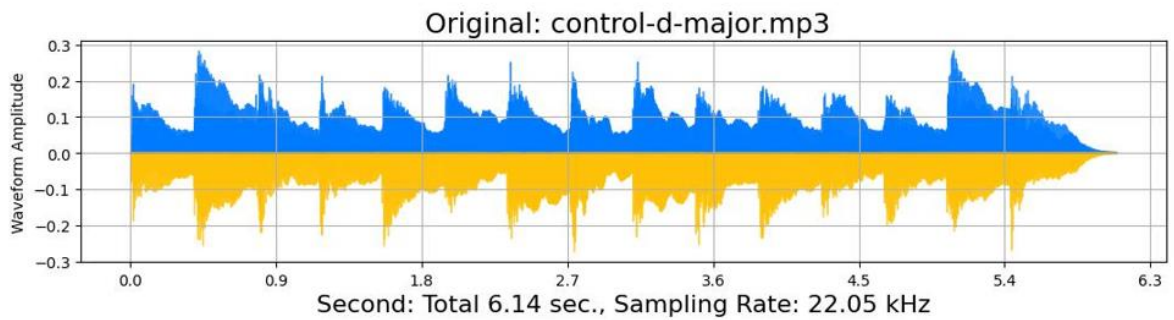
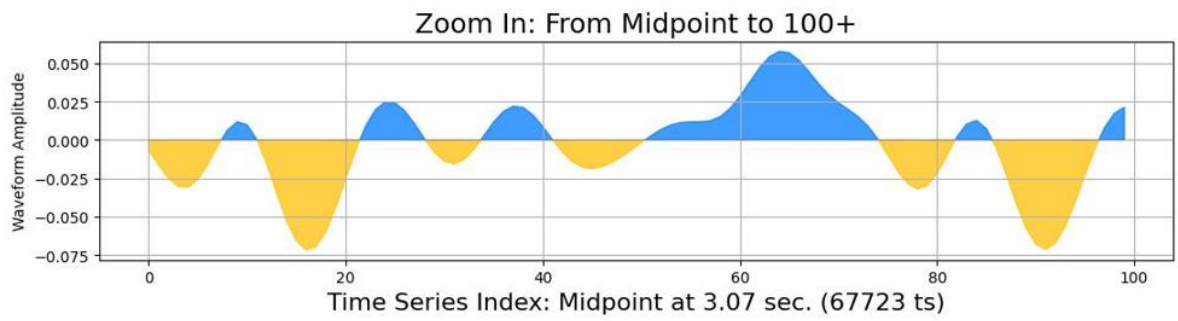
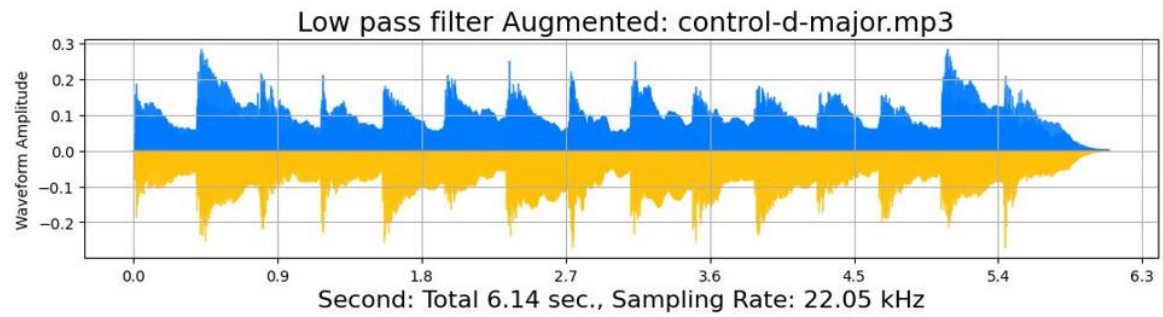


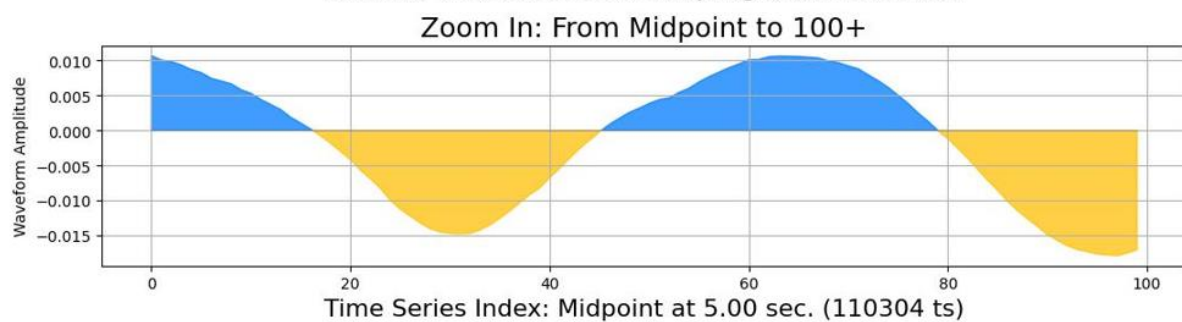
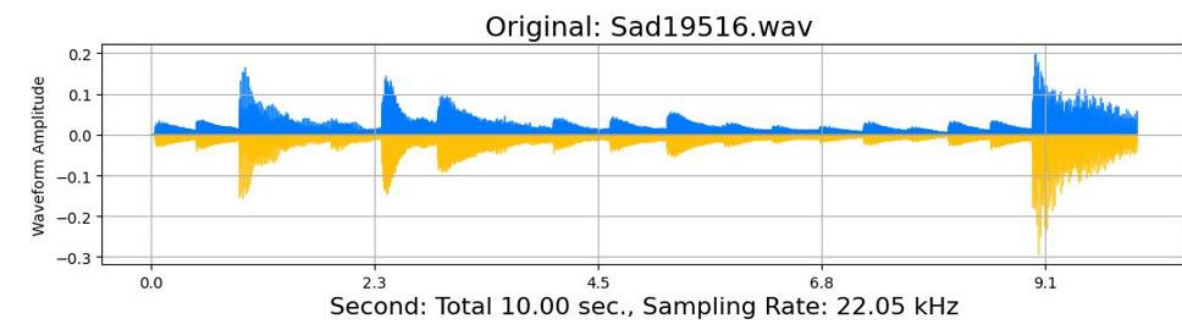
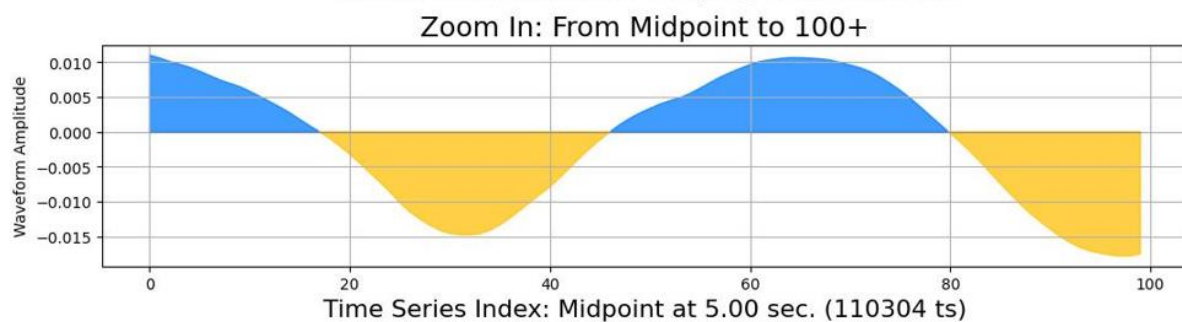
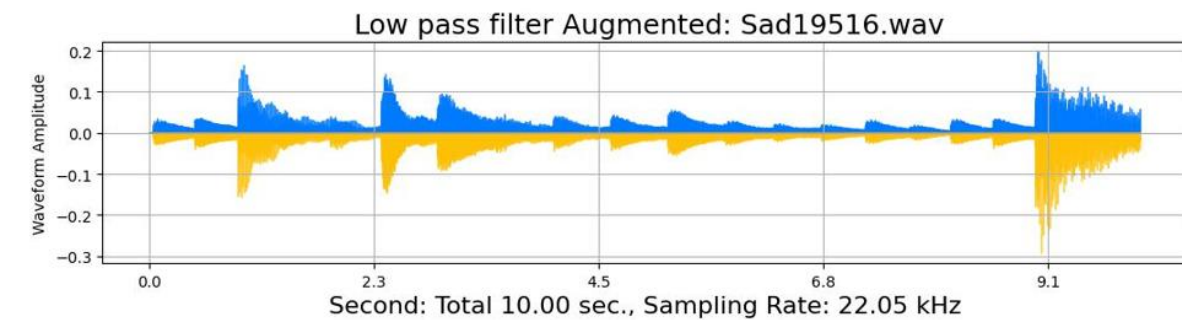


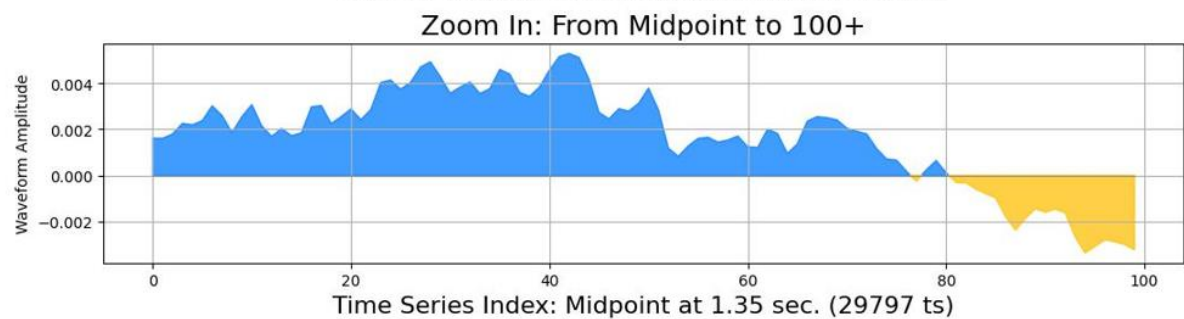
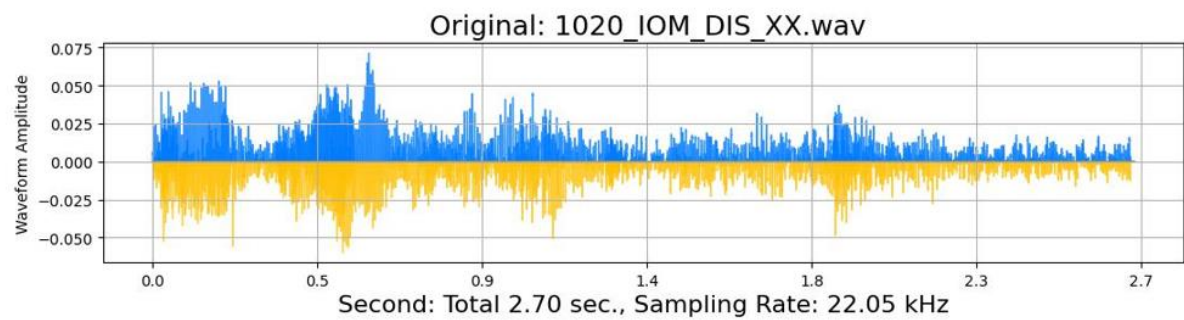
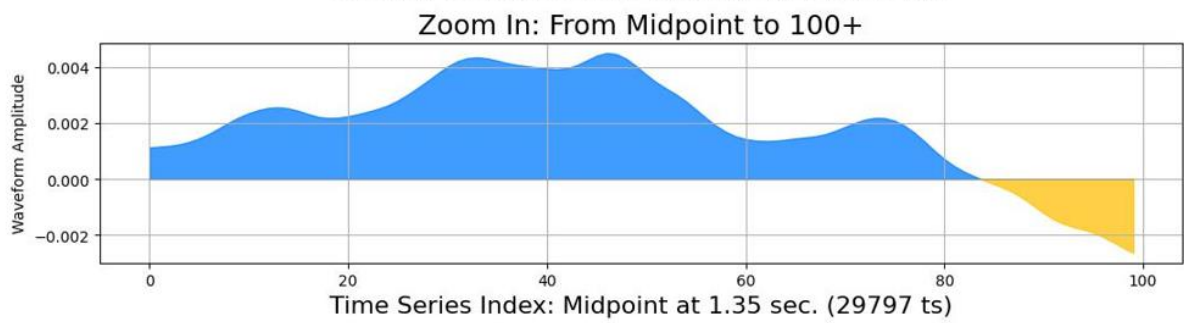
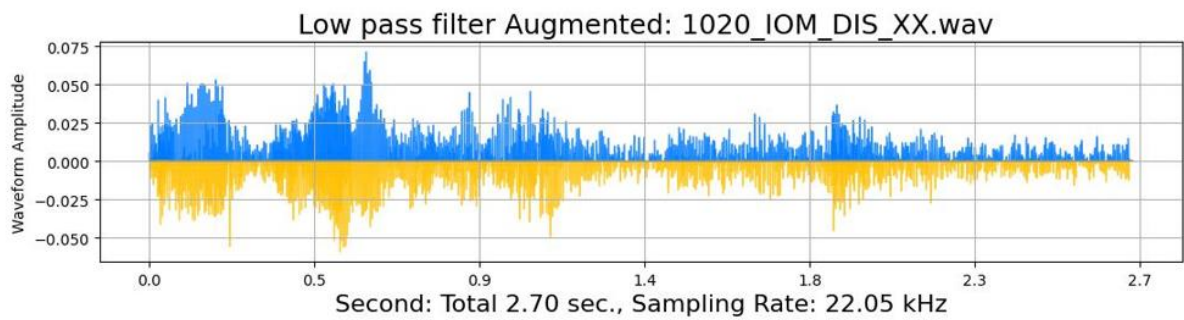


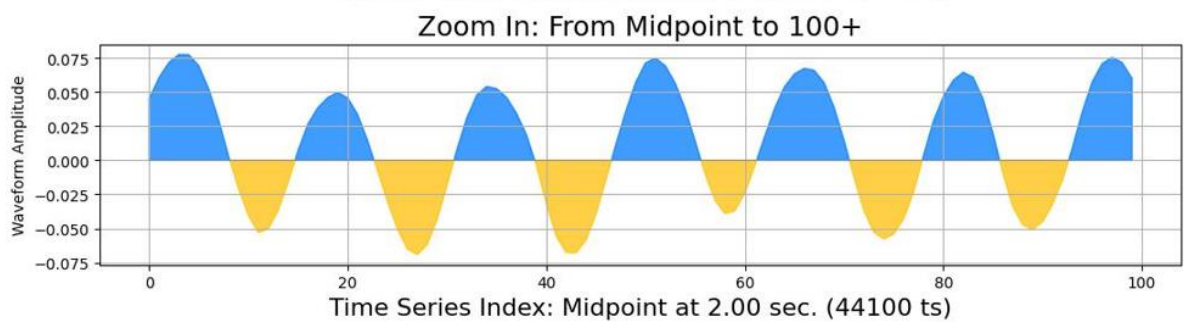
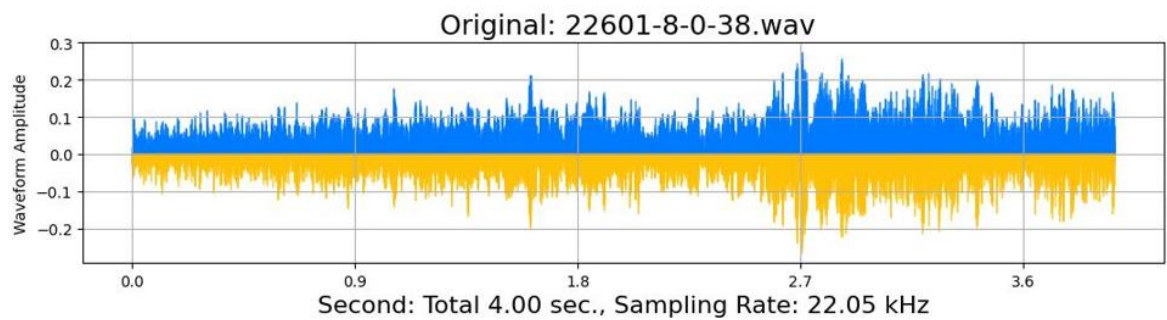
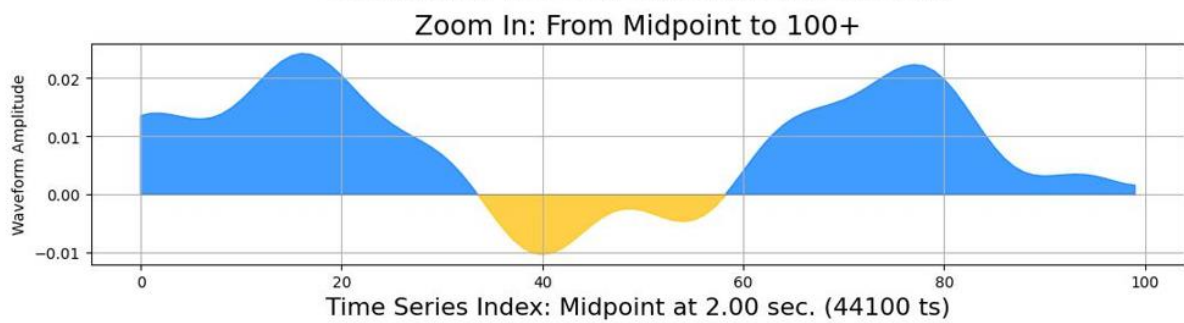
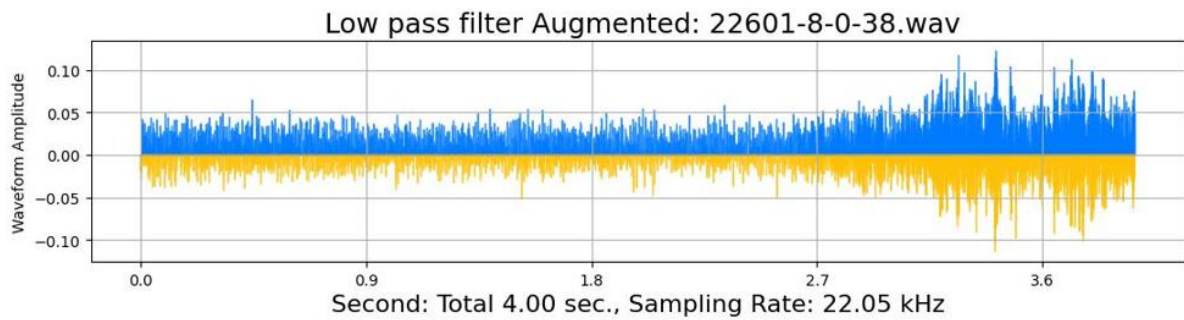


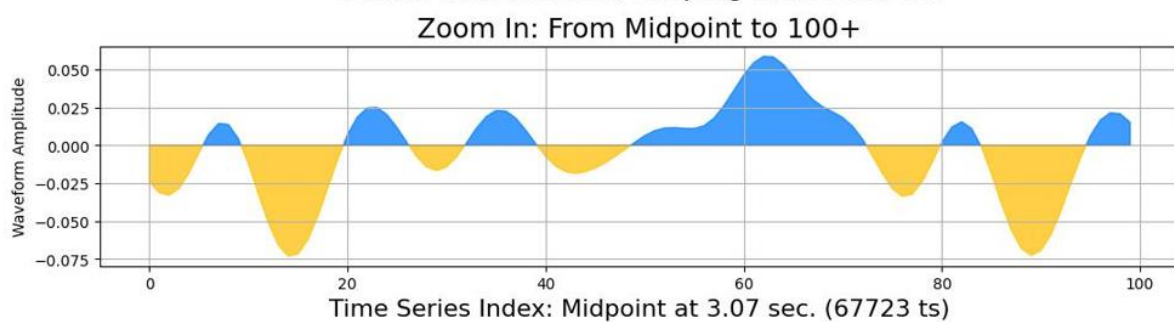
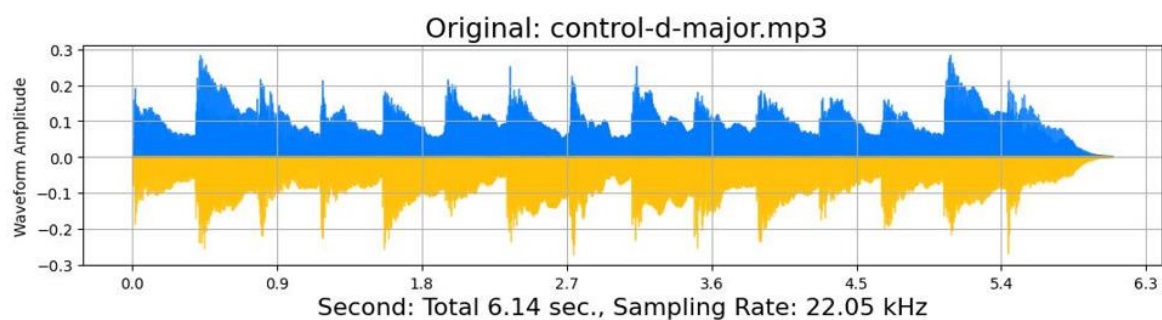
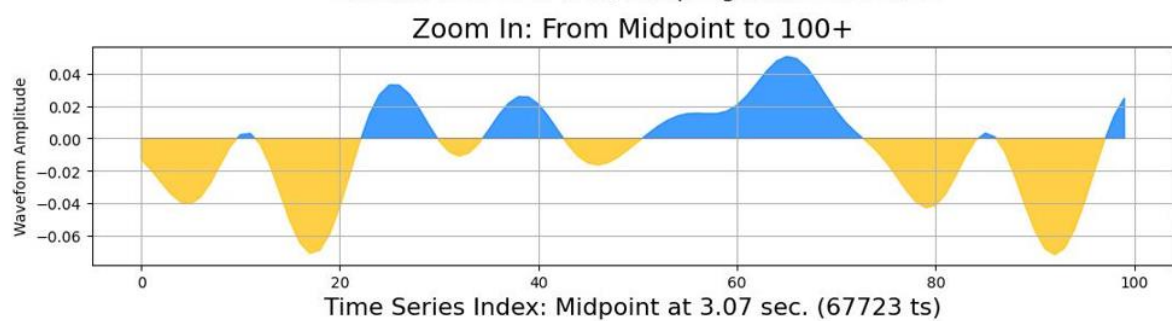
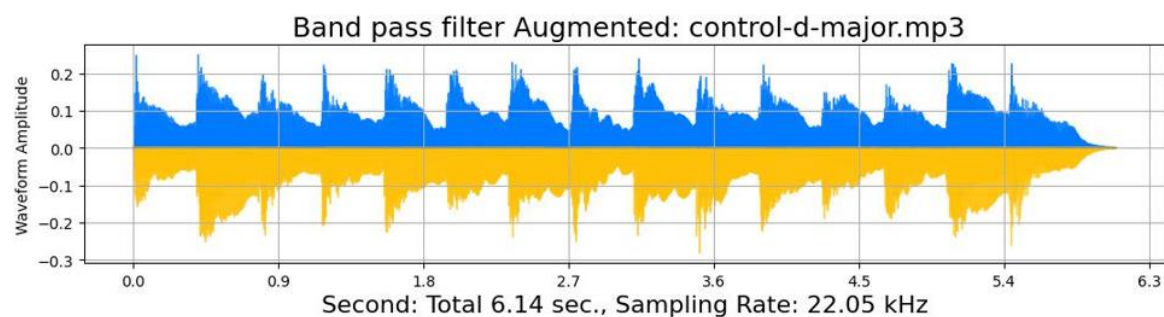


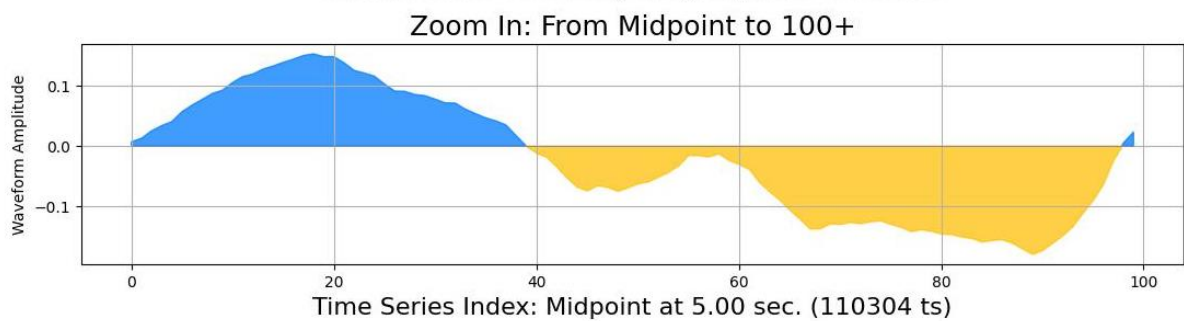
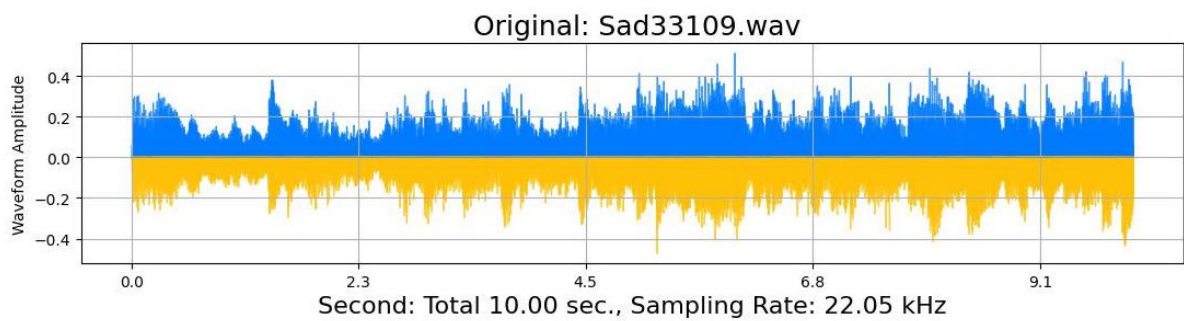
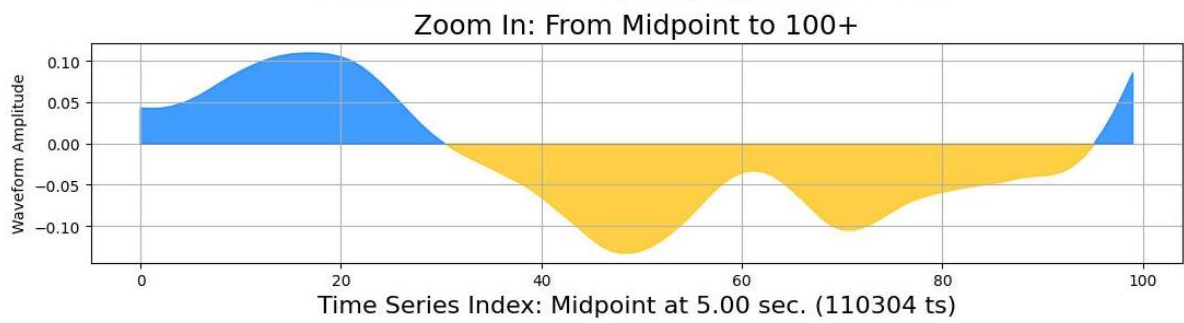
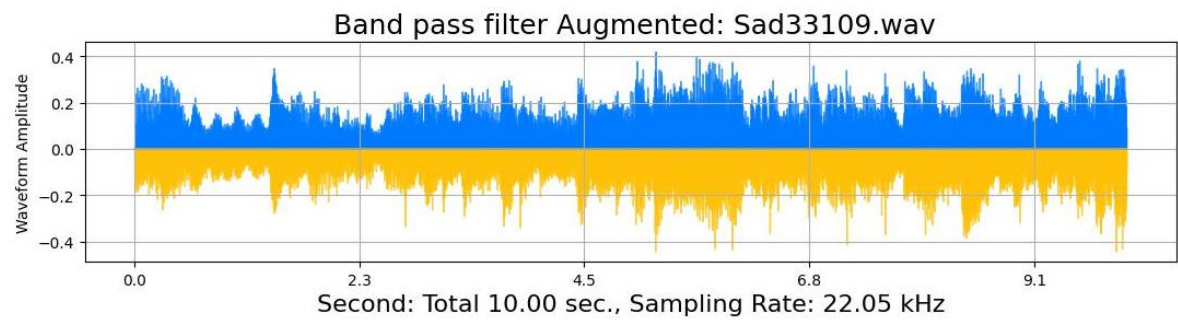


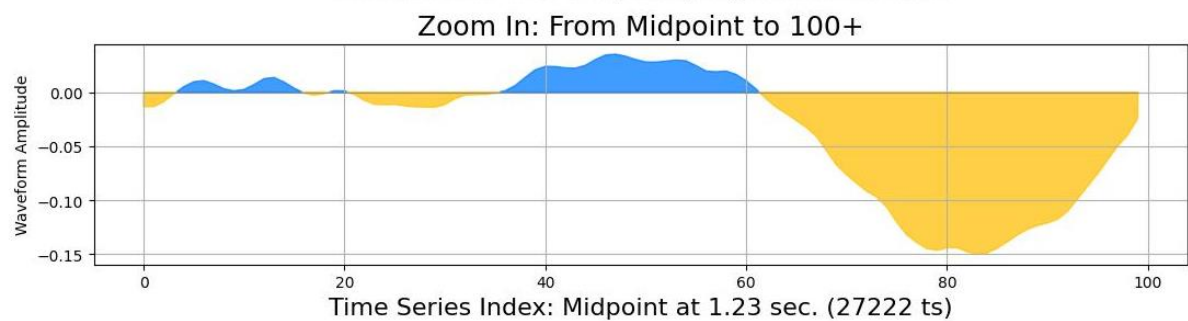
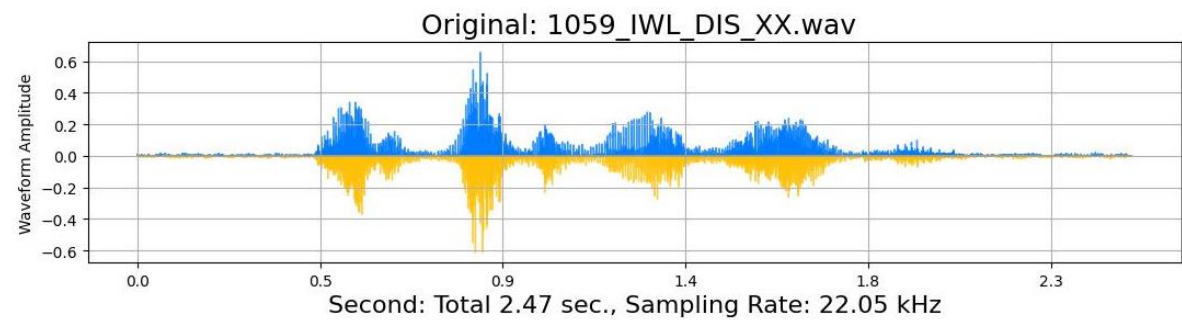
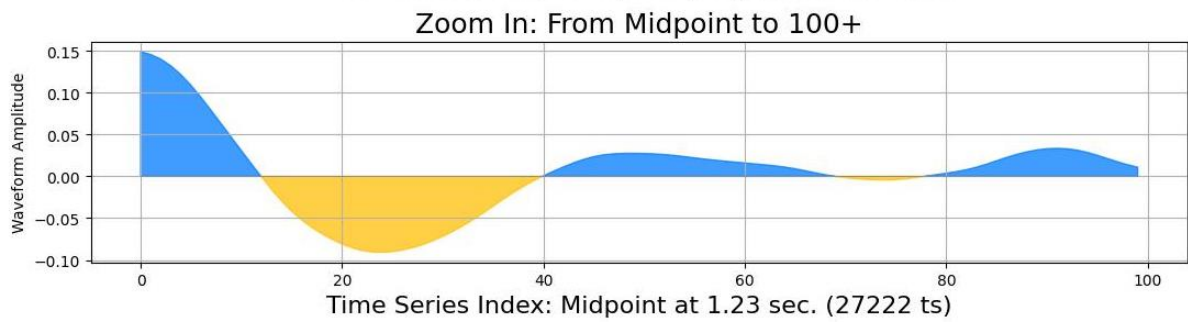
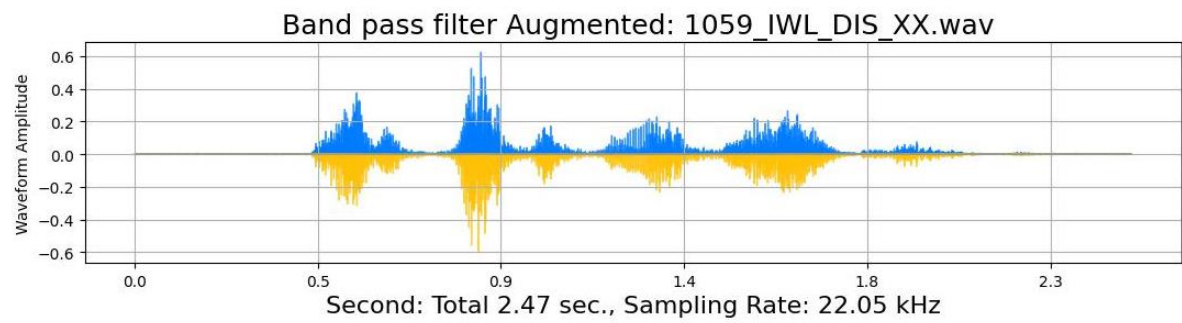


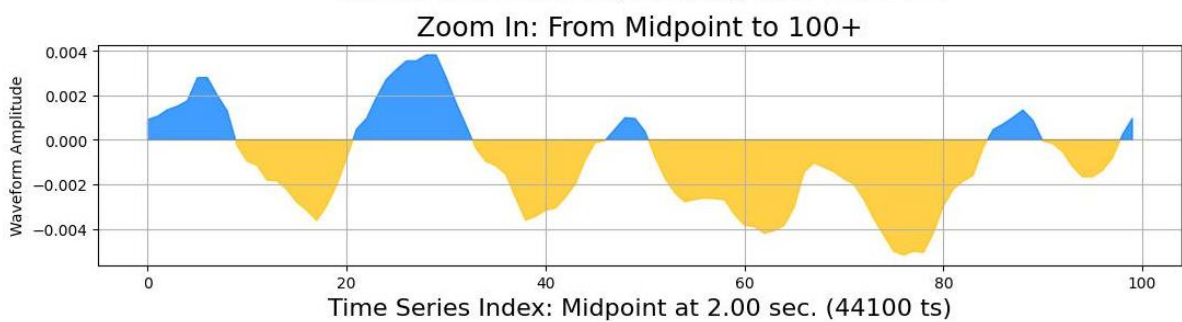
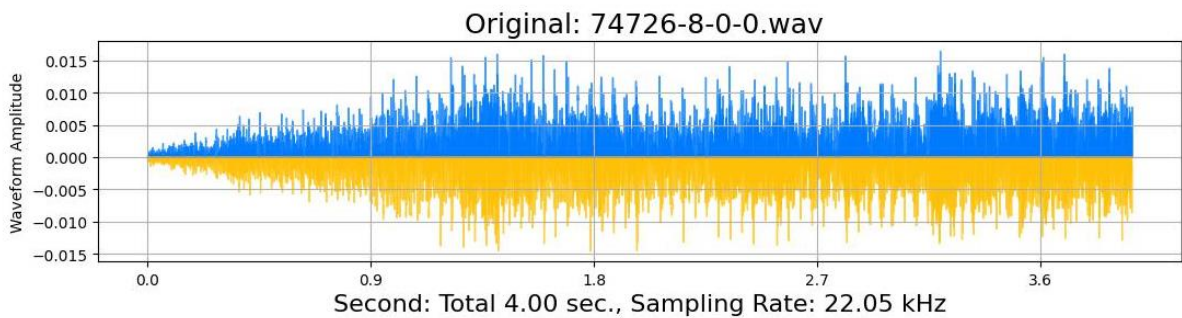
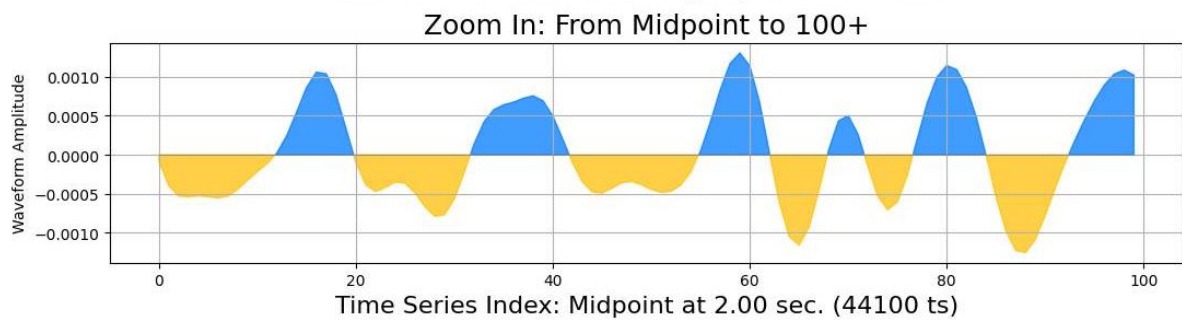
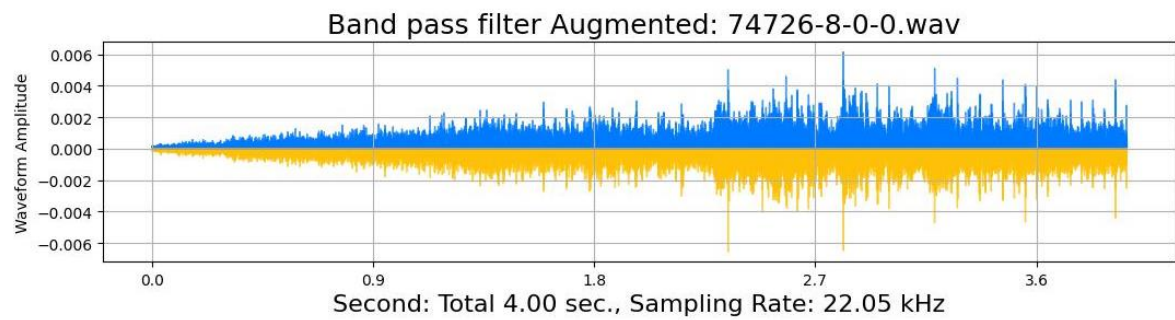




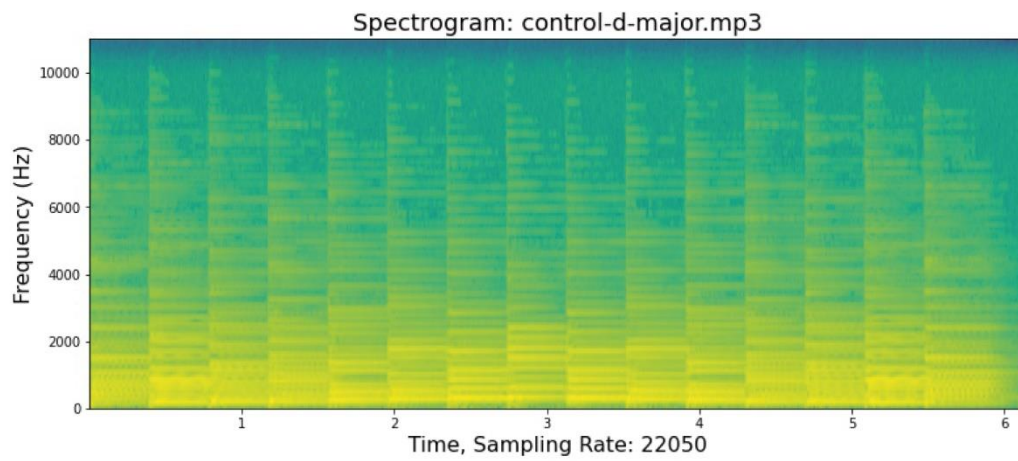
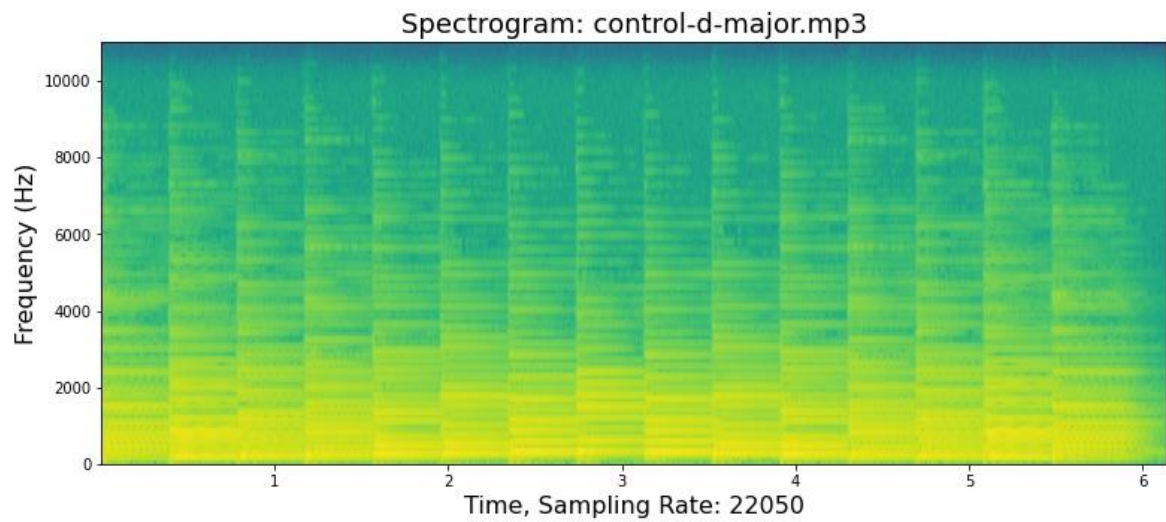




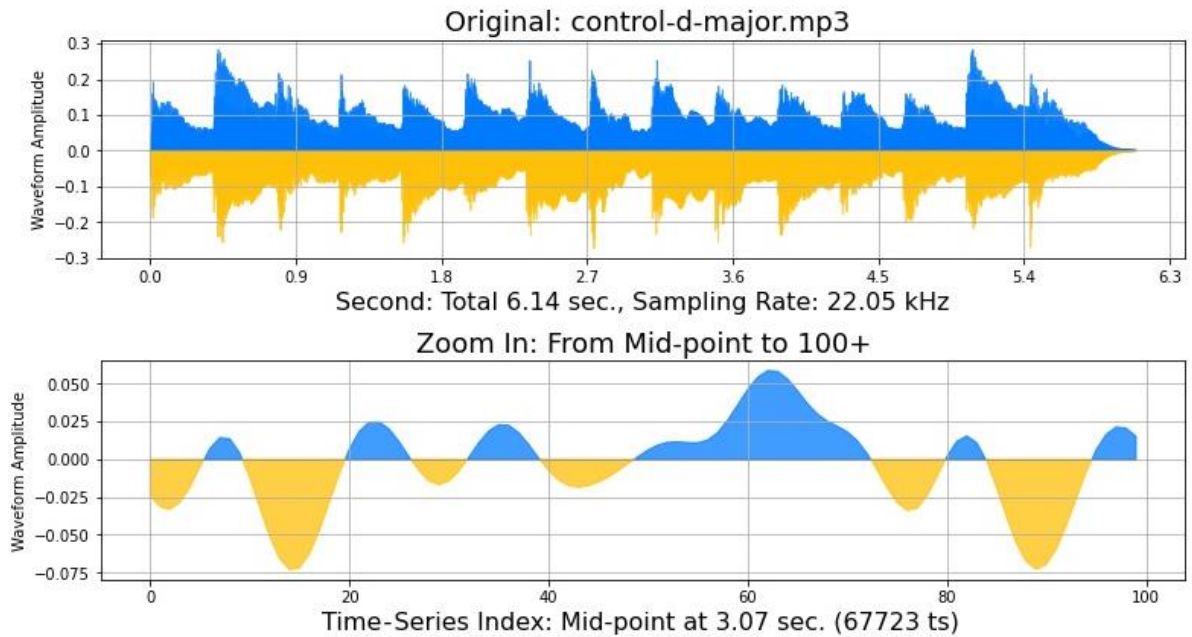




Chapter 8: Audio Data Augmentation with Spectrogram



▶ 0:00 / 0:06 ————— 🔊 ⋮



Help ×

...

Signature: `pic.specgram(x, NFFT=None, Fs=None, Fc=None, detrend=None, window=None, noverlap=None, cmap=None, xextent=None, pad_to=None, sides=None, scale_by_freq=None, mode=None, scale=None, vmin=None, vmax=None, *, data=None, **kwargs)`

Docstring:

Plot a spectrogram.

Compute and plot a spectrogram of data in `*x*`. Data are split into `*NFFT*` length segments and the spectrum of each section is computed. The windowing function `*window*` is applied to each segment, and the amount of overlap of each segment is specified with `*noverlap*`. The spectrogram is plotted as a colormap (using `imshow`).

Parameters

x : 1-D array or sequence
Array or sequence containing the data.

Fs : scalar
The sampling frequency (samples per time unit). It is used to calculate the Fourier frequencies, `freqs`, in cycles per time unit. The default value is 2.

Help

Help ×

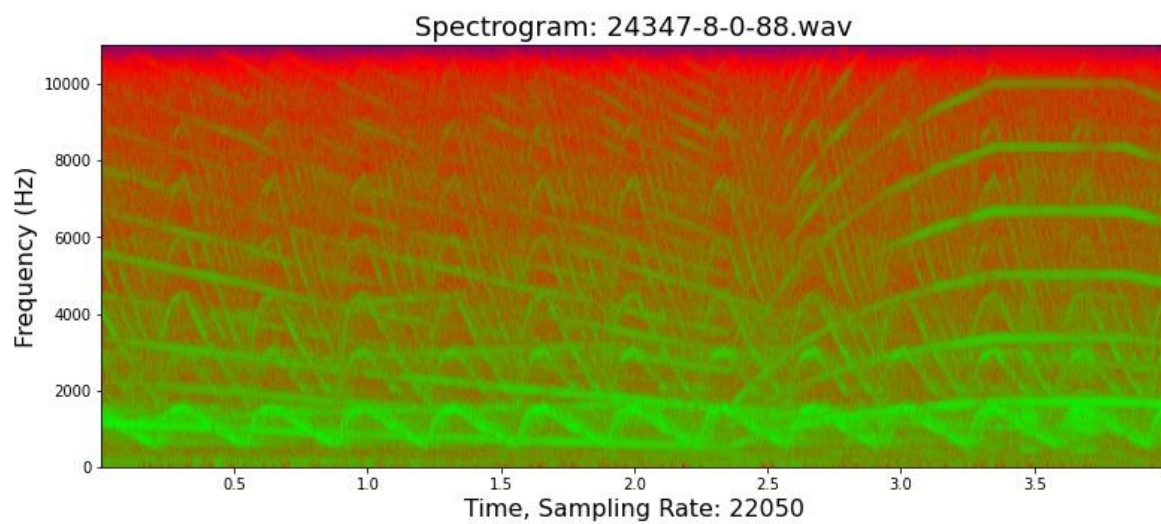
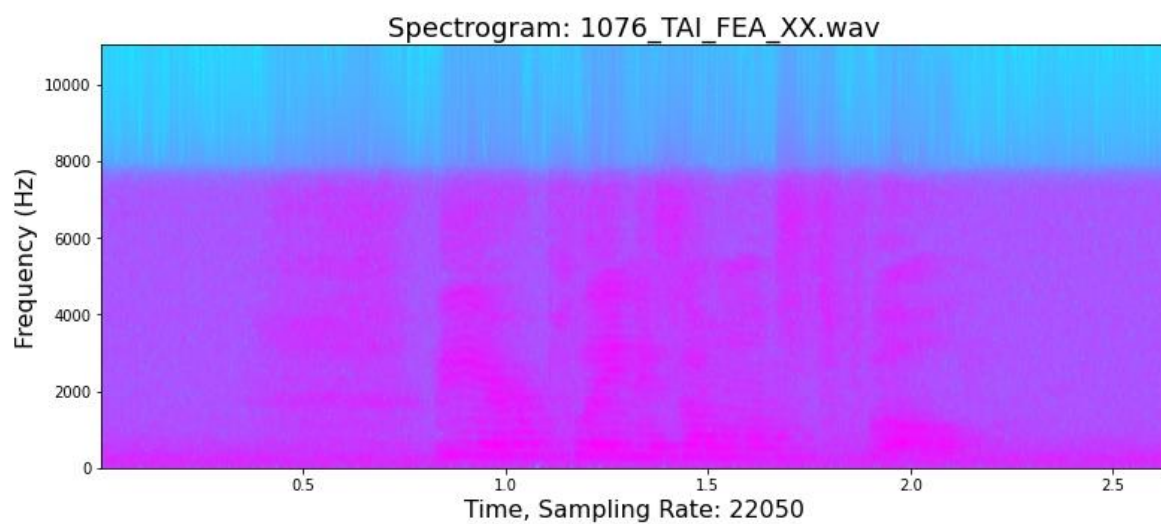
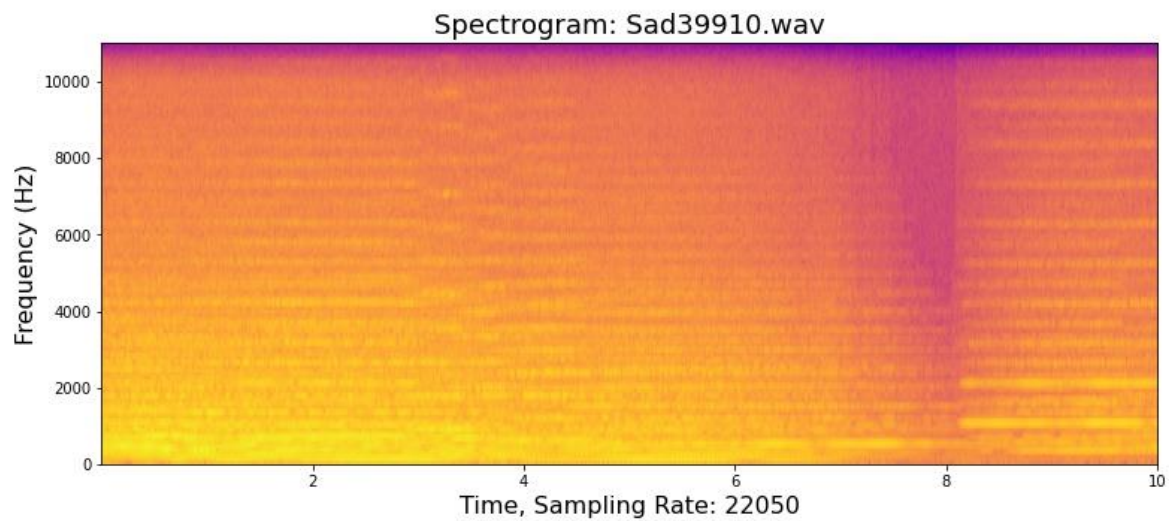
...

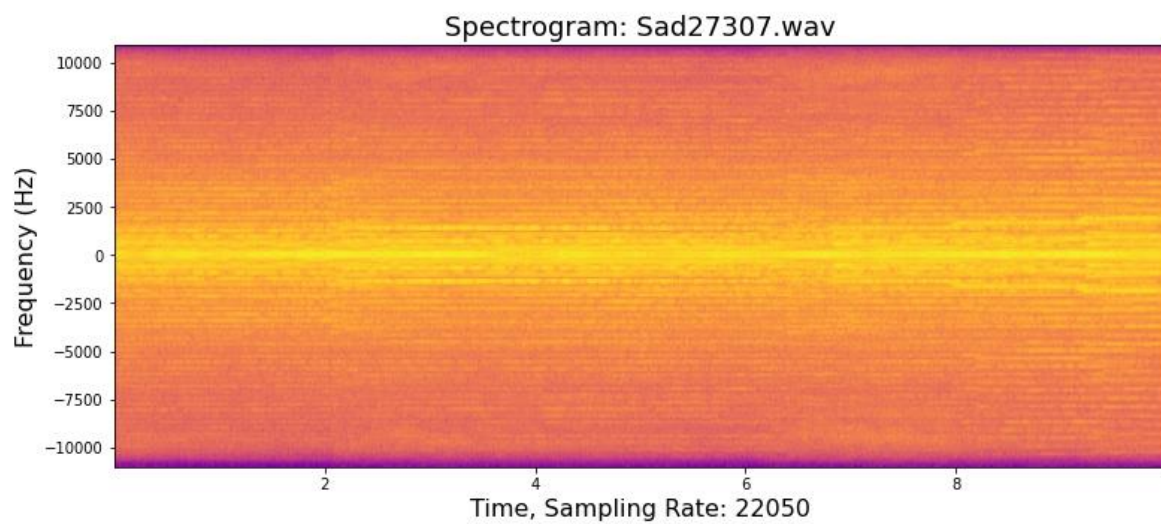
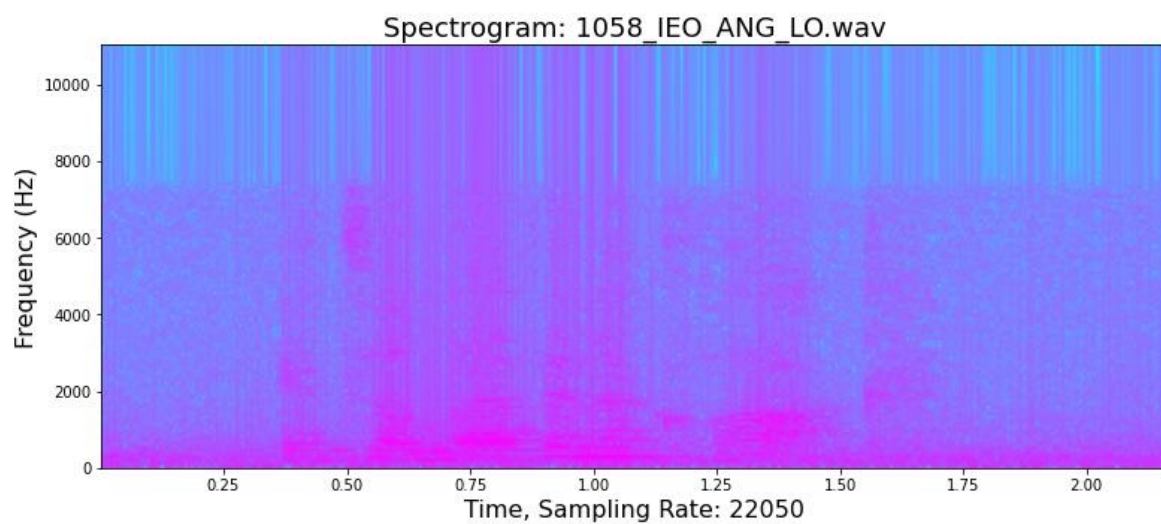
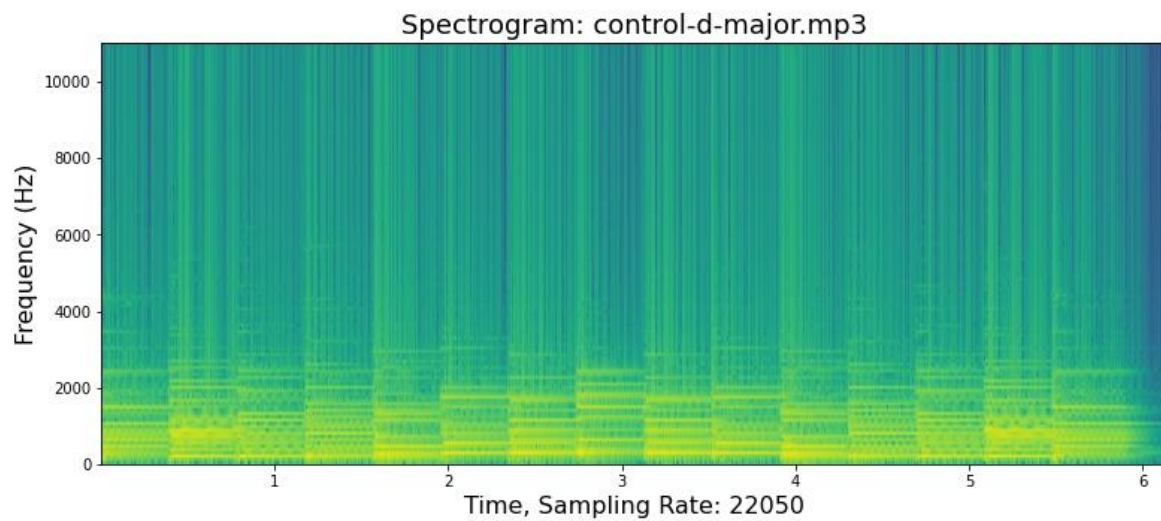
Signature: `pluto.draw_spectrogram(df, fname='Spectrogram', window=<function window_hanning at 0x7fe93bb7edc0>, cmap='viridis', sides='default', mode='default')`

Docstring: <no docstring>

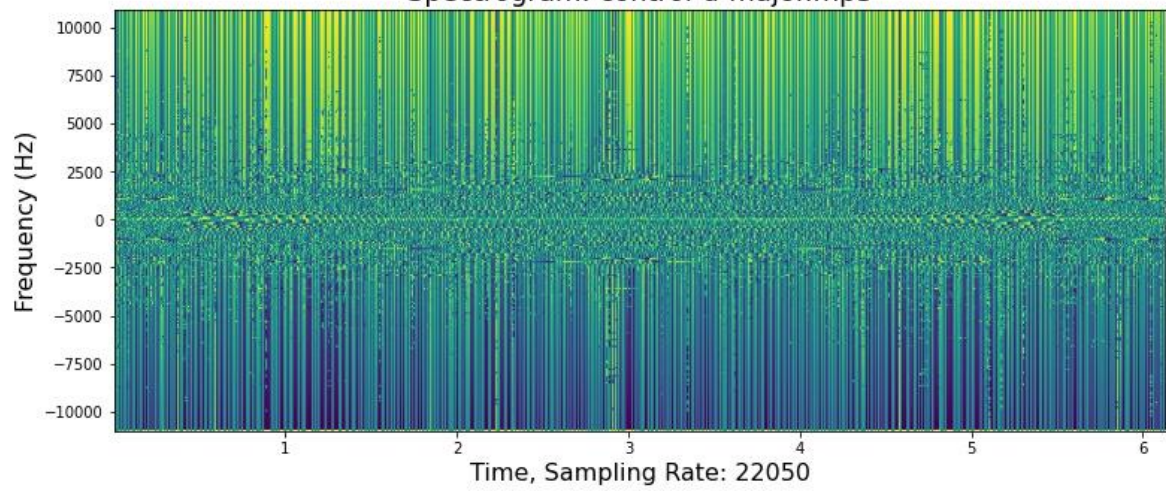
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Type: method

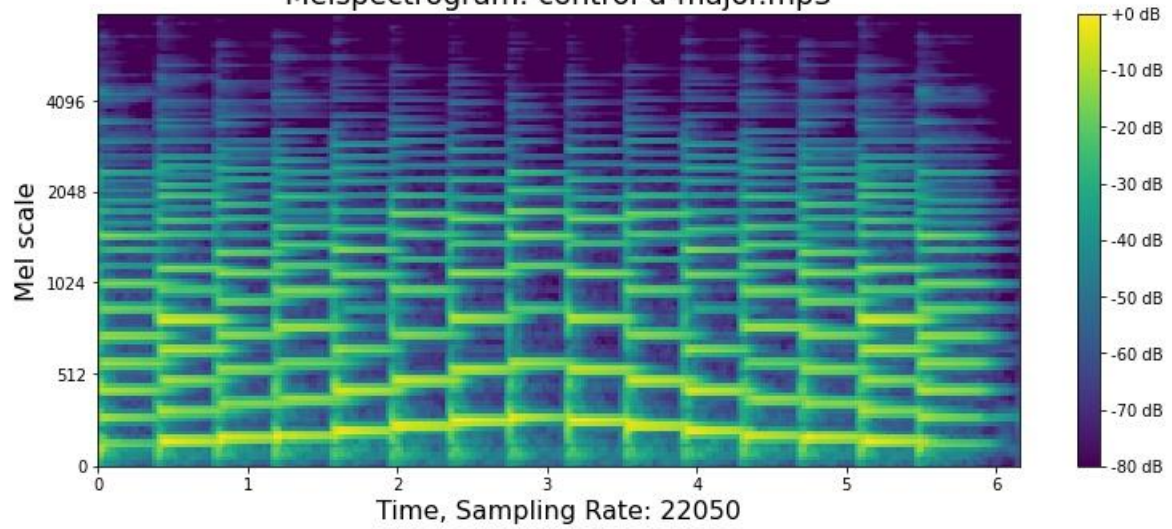




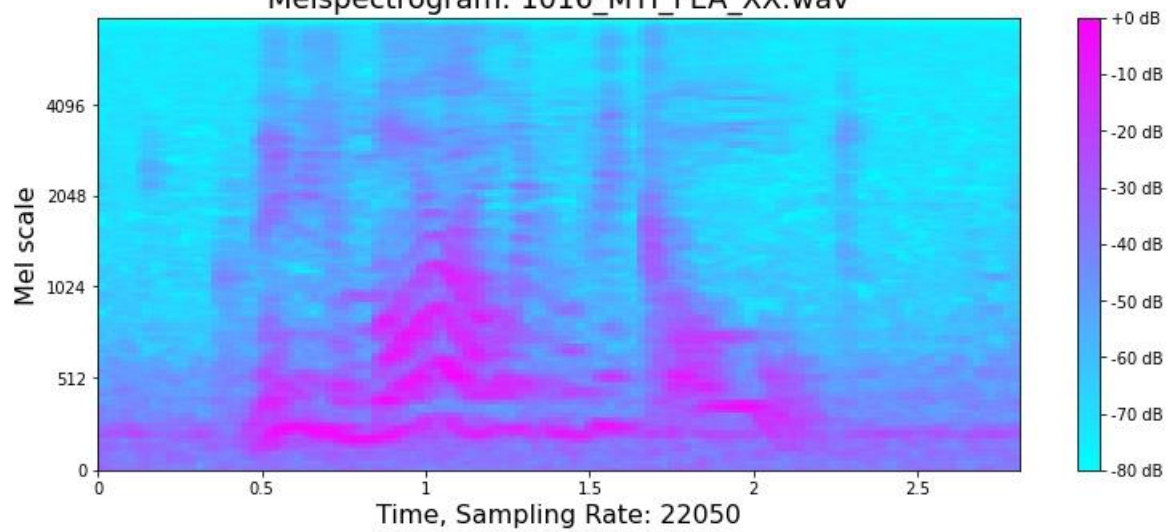
Spectrogram: control-d-major.mp3

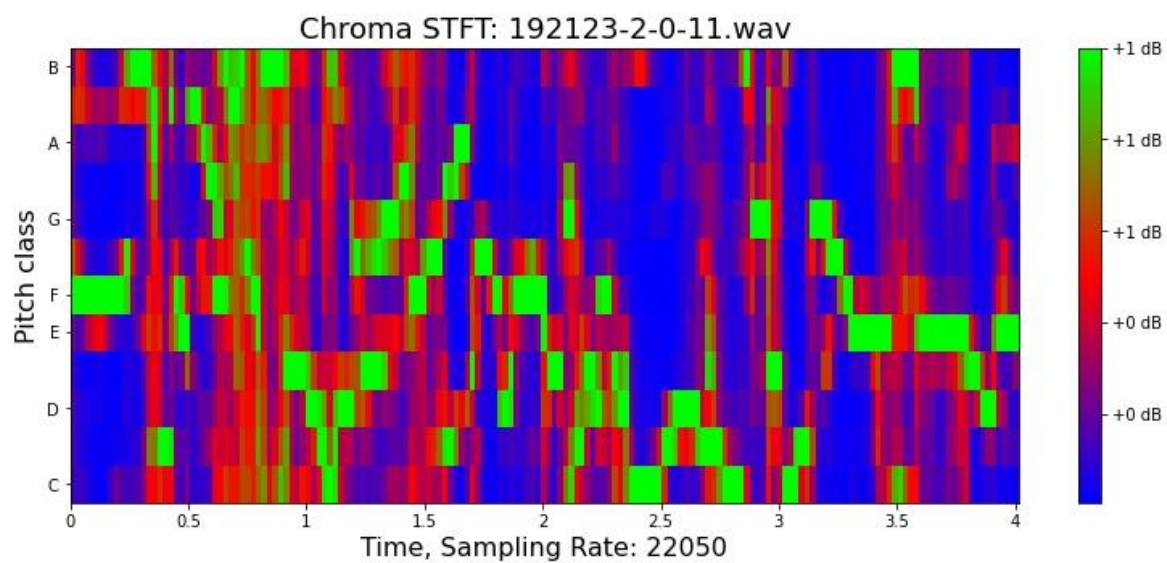
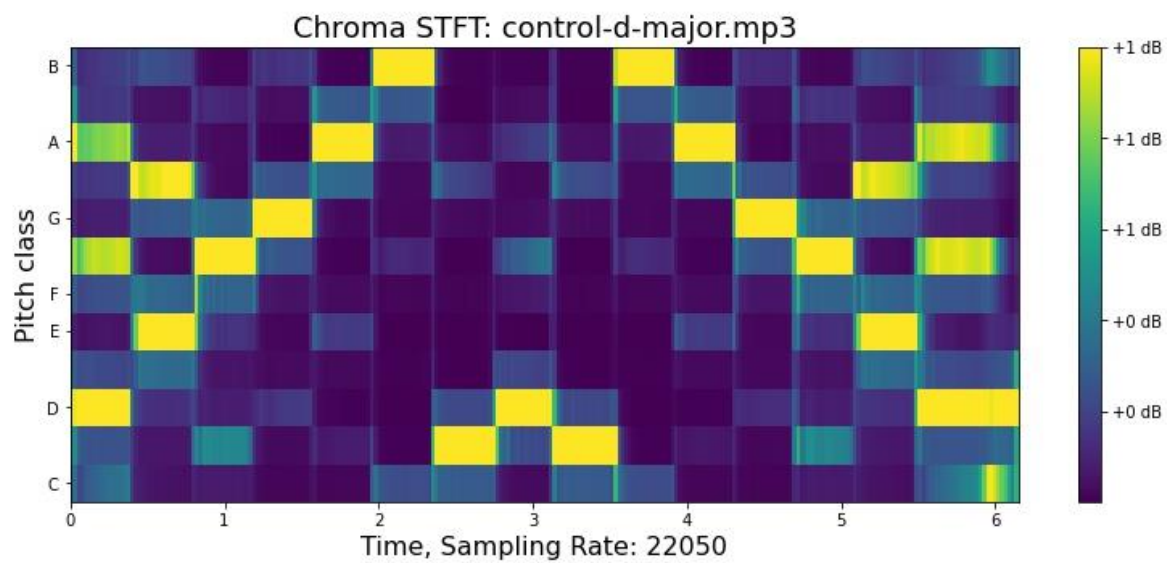


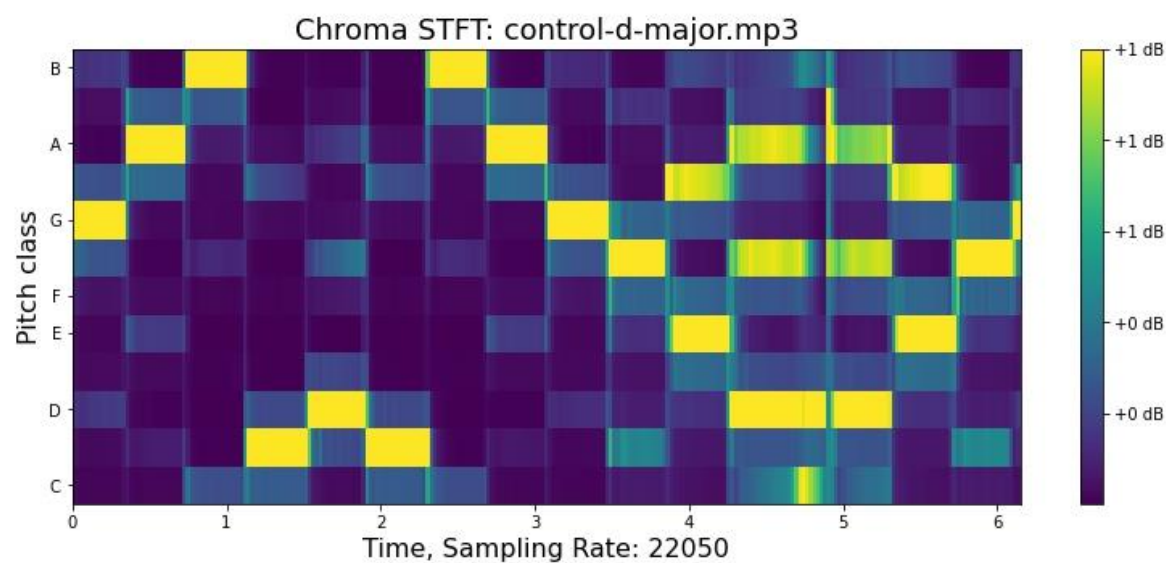
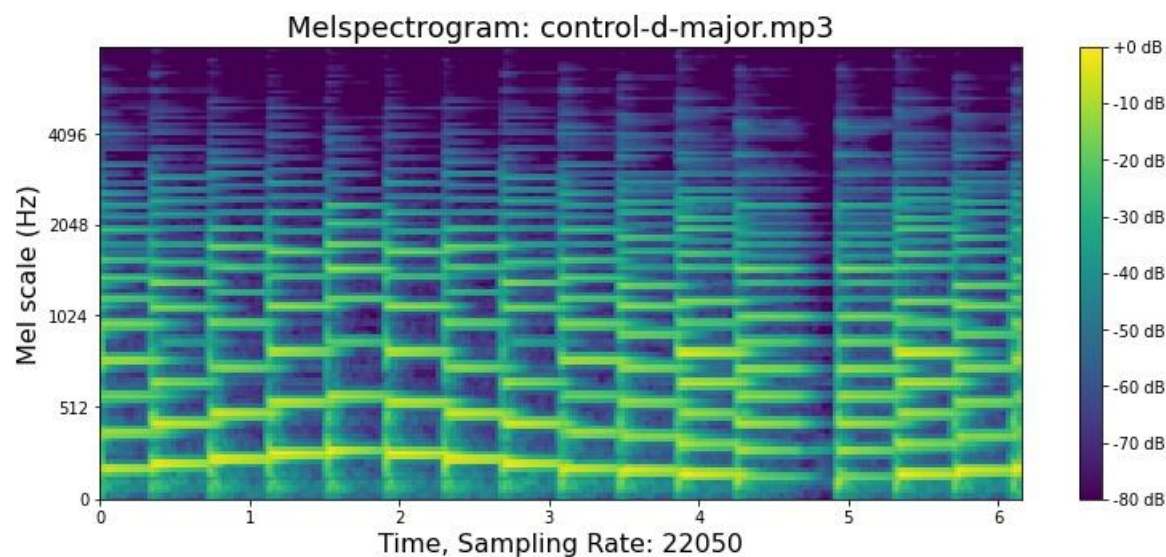
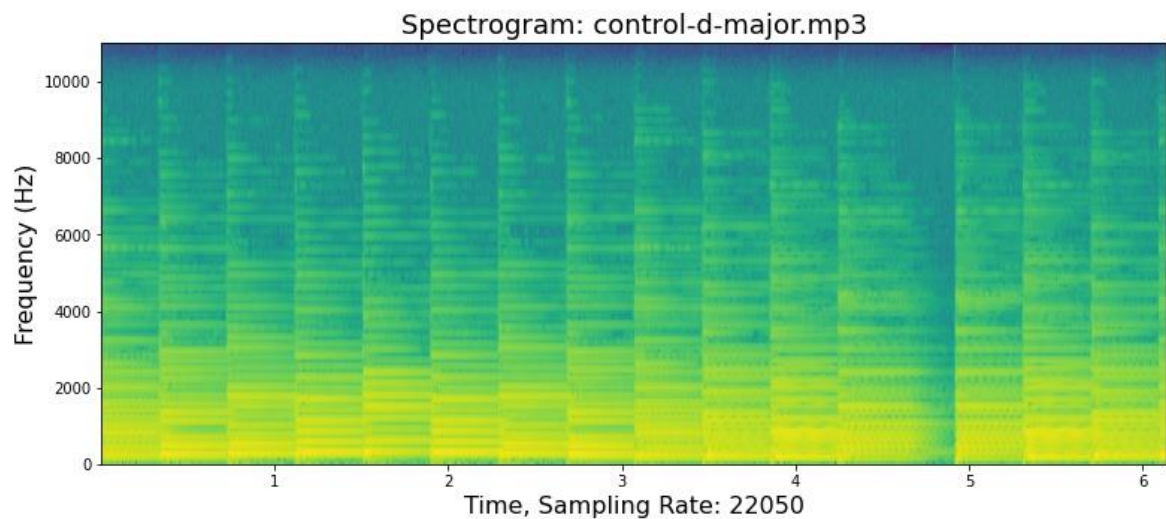
Melspectrogram: control-d-major.mp3

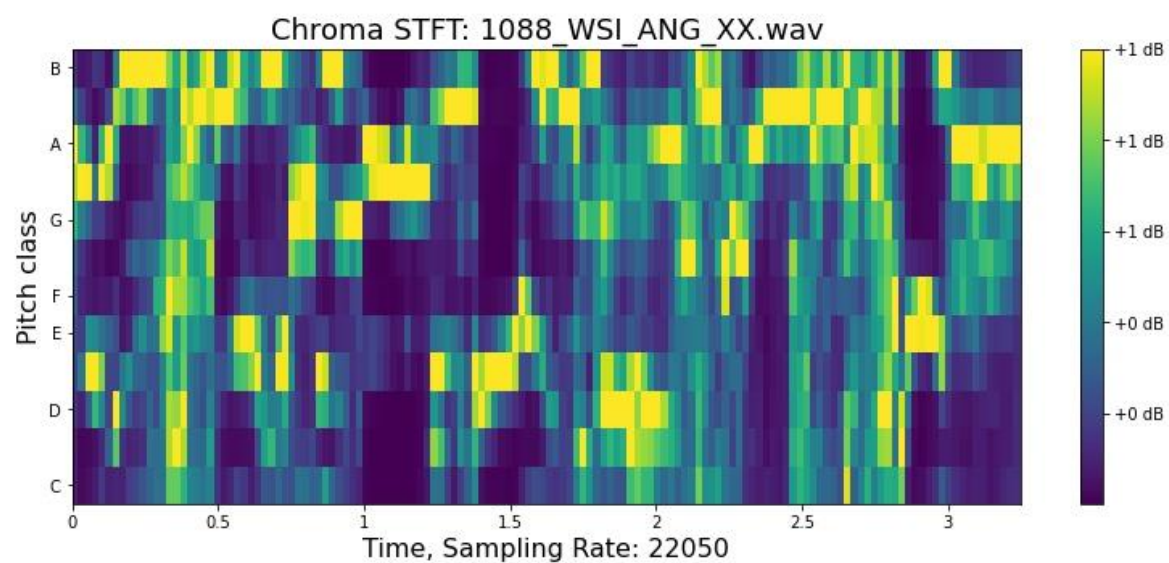
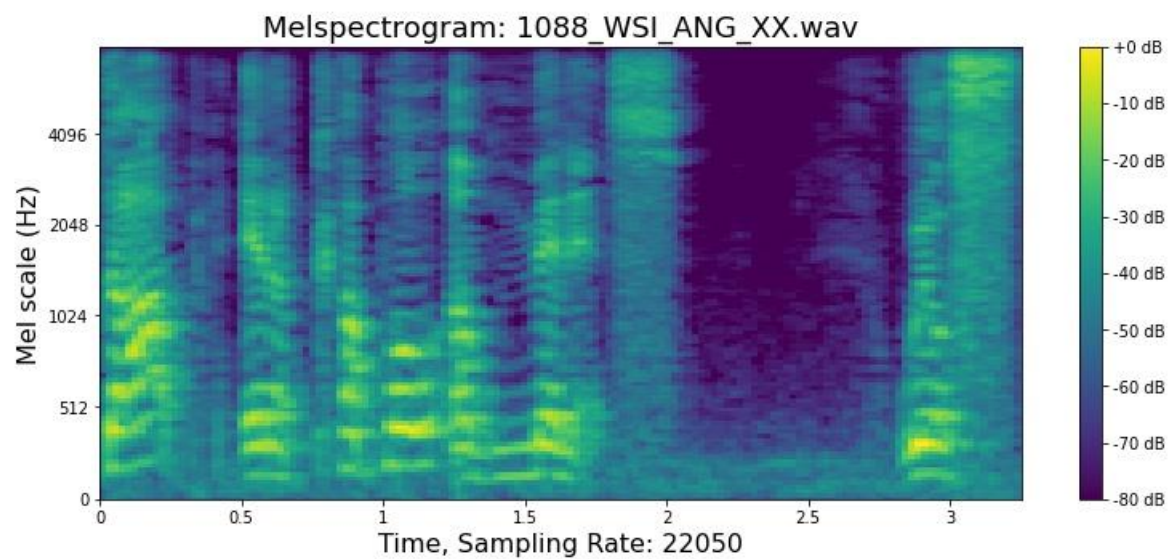
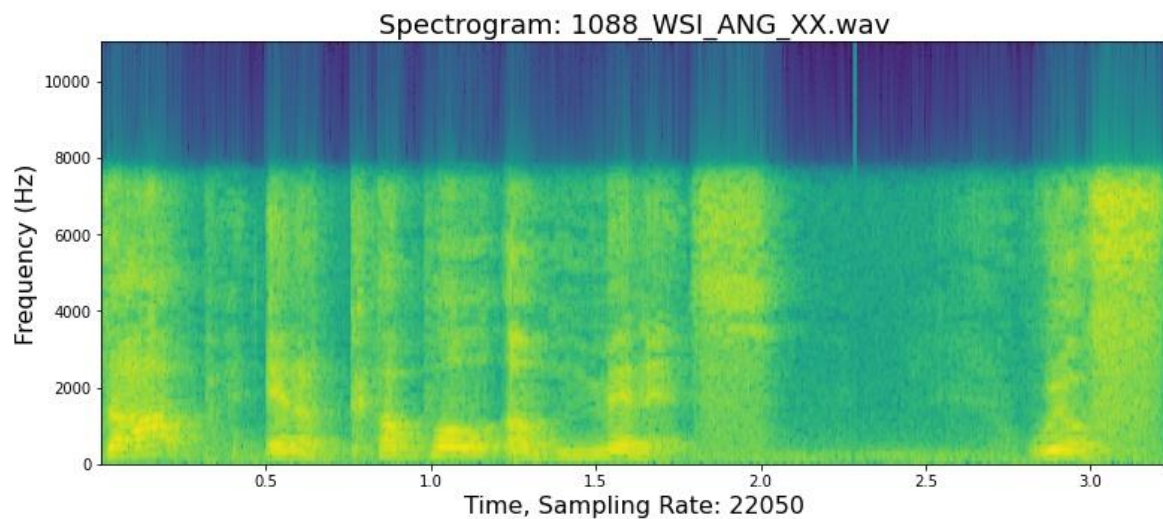


Melspectrogram: 1016_MTI_FEA_XX.wav

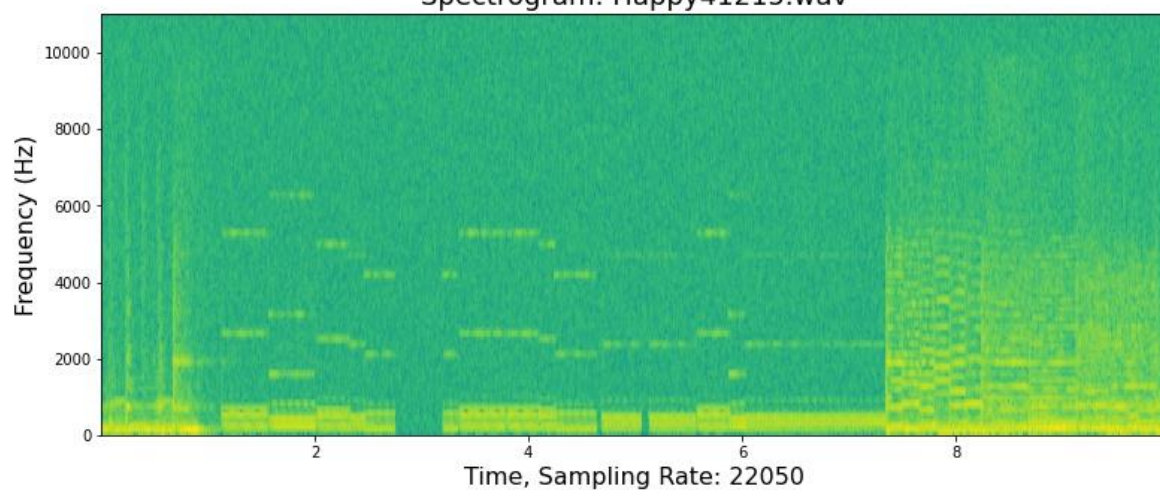




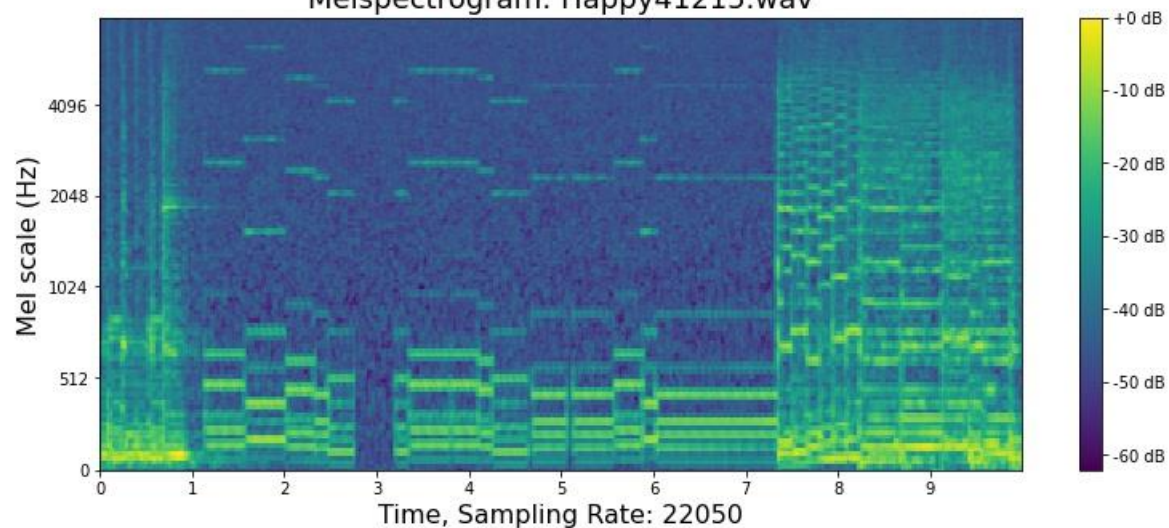




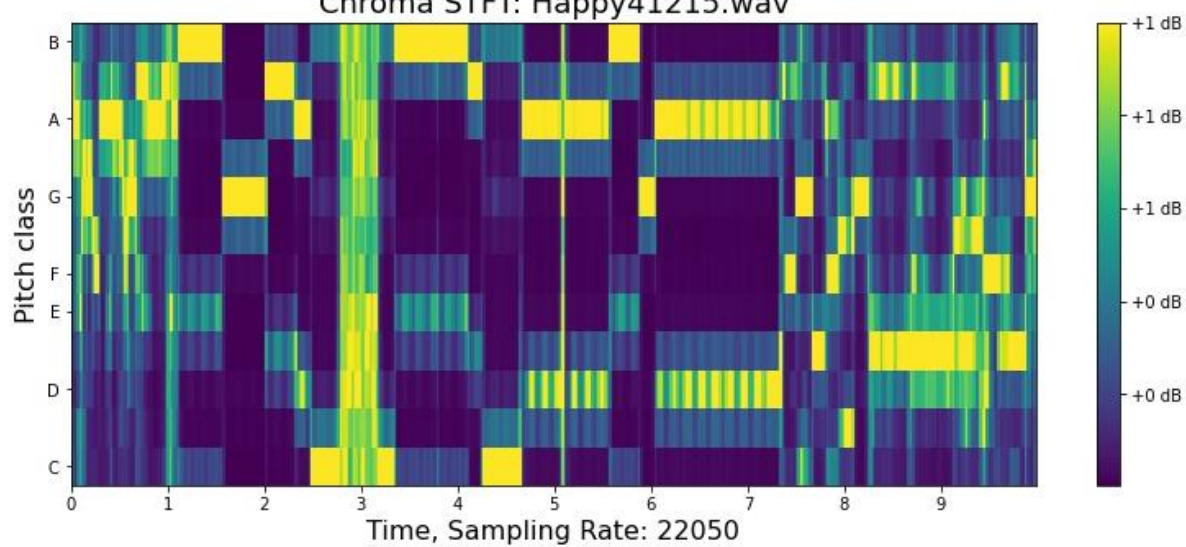
Spectrogram: Happy41215.wav



Melspectrogram: Happy41215.wav



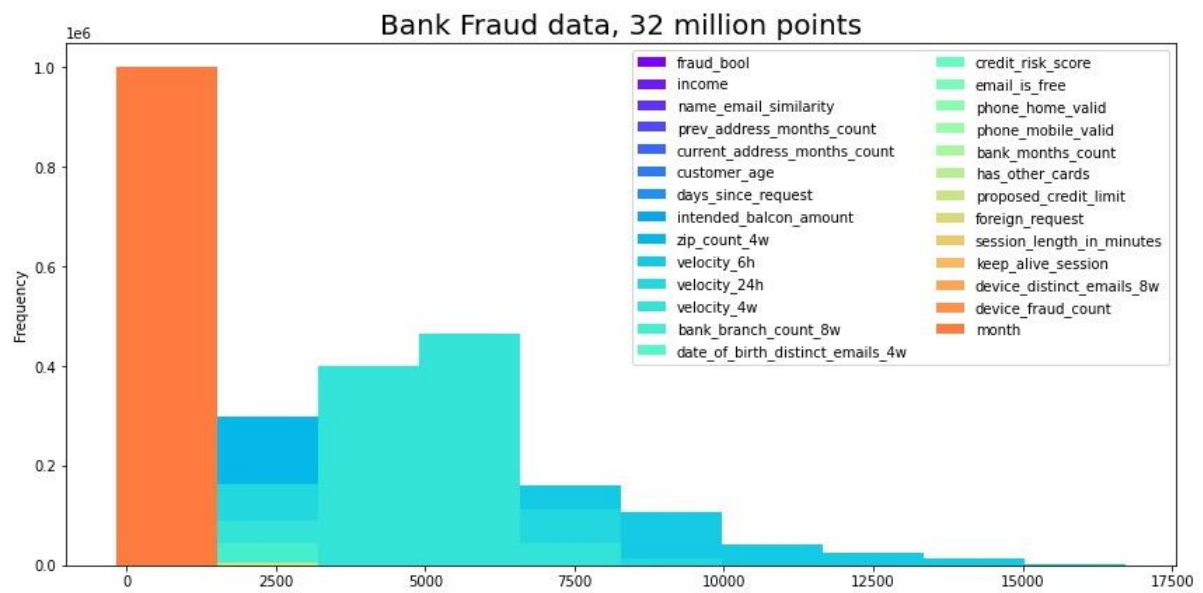
Chroma STFT: Happy41215.wav



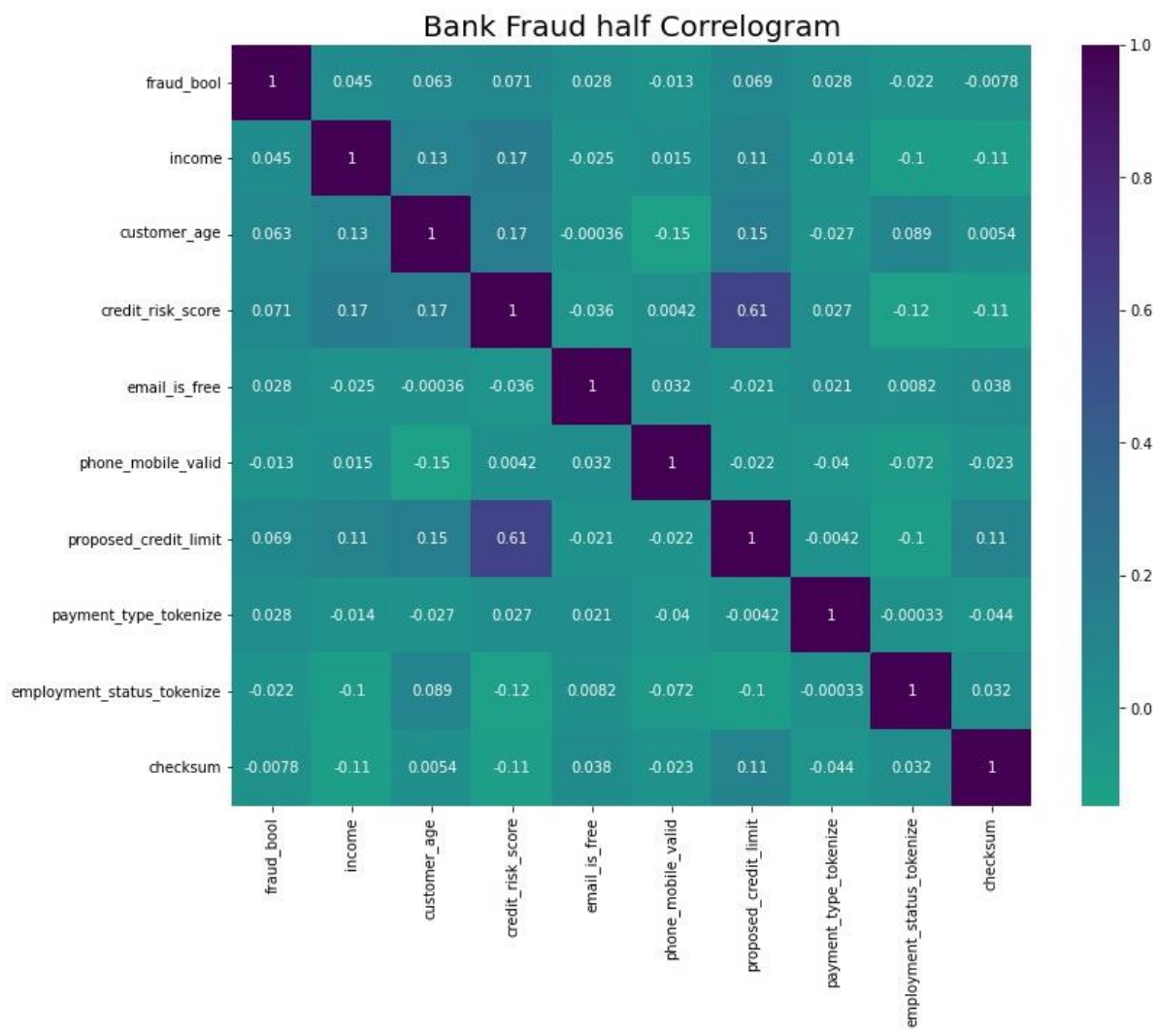
Chapter 9: Tabular Data Augmentation

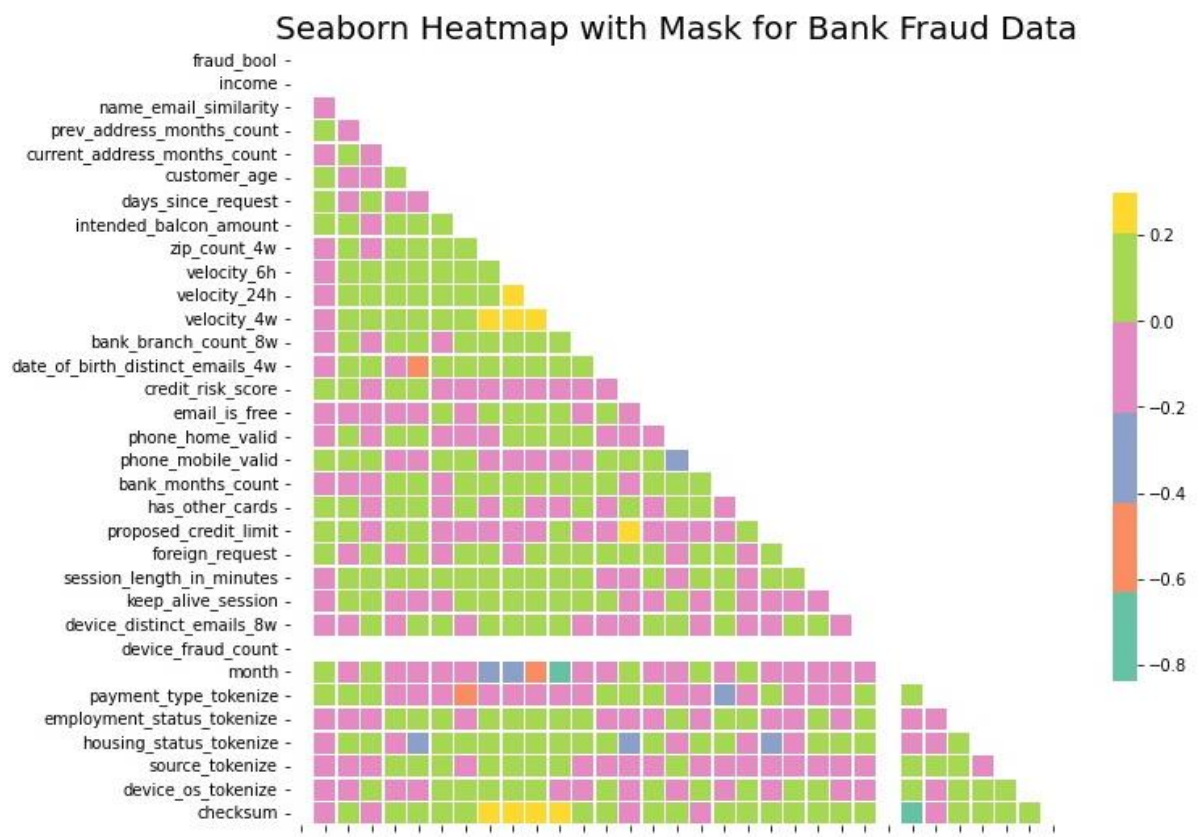
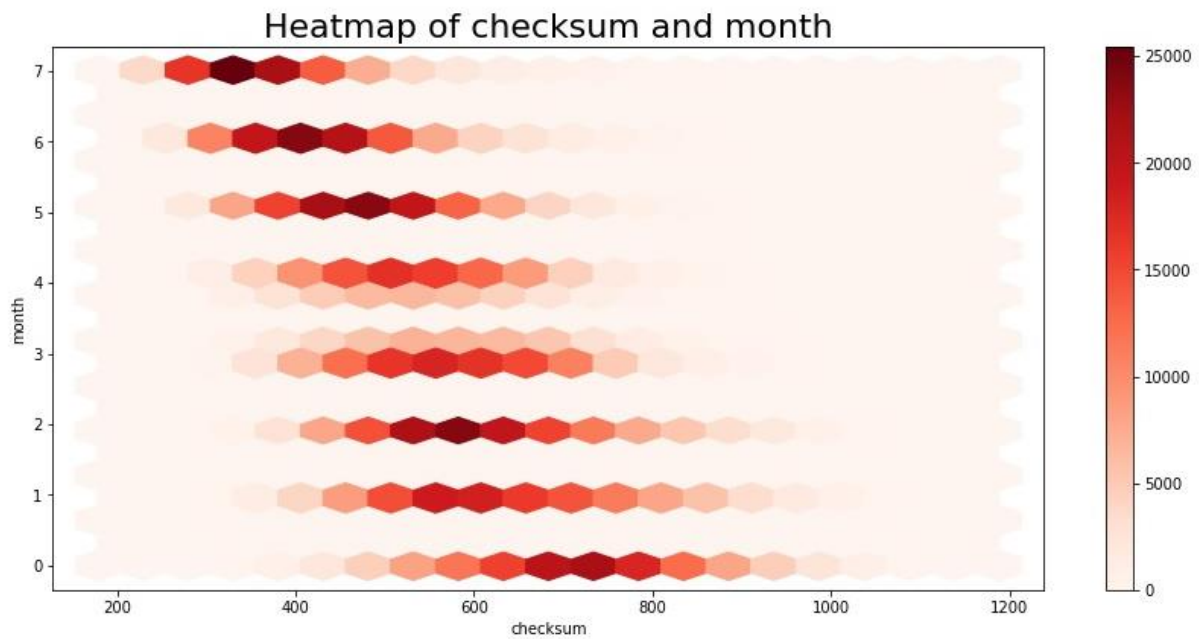
	fraud_bool	proposed_credit_limit	customer_age	payment_type
751785	0	200.0	30	AD
379542	0	200.0	40	AC
208050	0	200.0	40	AD
562807	0	200.0	50	AB
471898	0	1000.0	30	AB

	fraud_bool	proposed_credit_limit	customer_age	payment_type
331487	0	200.0	50	AB
877247	0	200.0	30	AB
369957	0	1500.0	20	AB
934633	0	500.0	40	AD
751676	0	200.0	40	AD

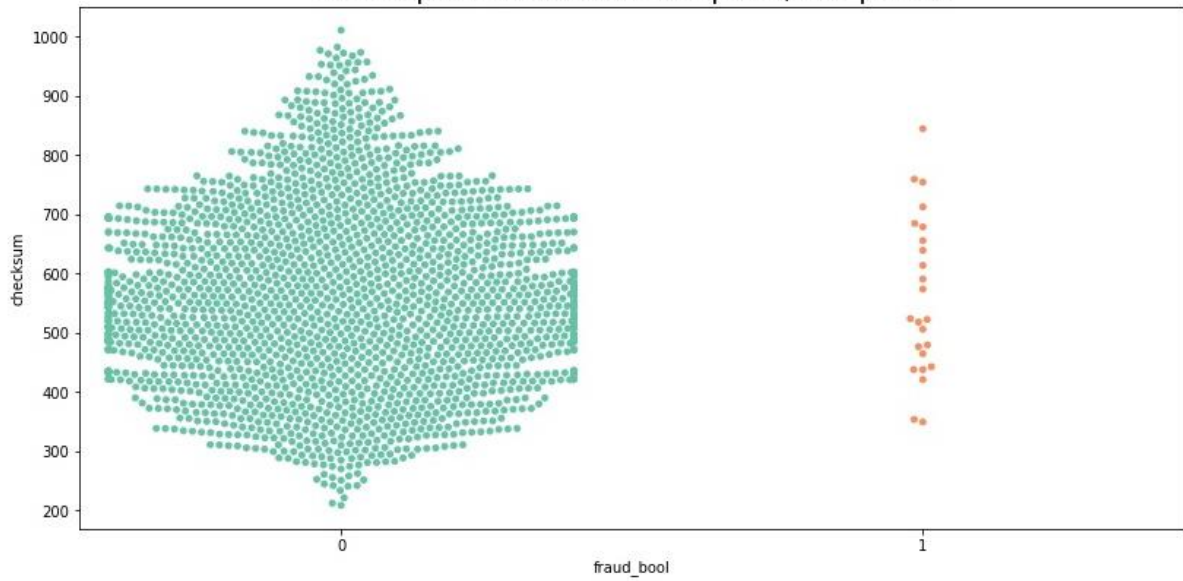


	payment_type	payment_type_tokenize
0	AA	0
1	AB	1
2	AC	2
3	AB	1
4	AB	1
5	AD	3

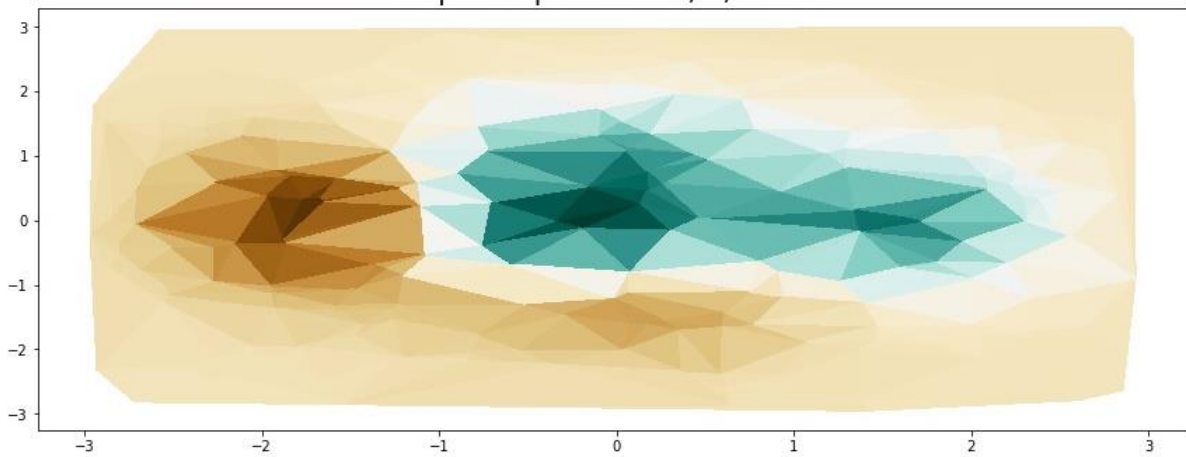




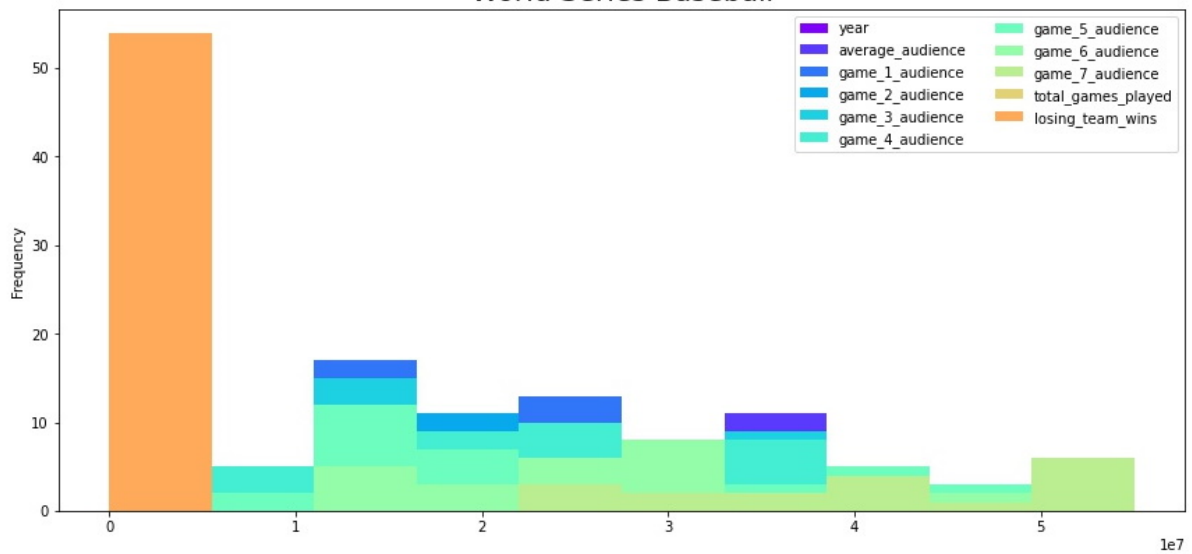
Swarmplot Bank data. sample 2,000 points

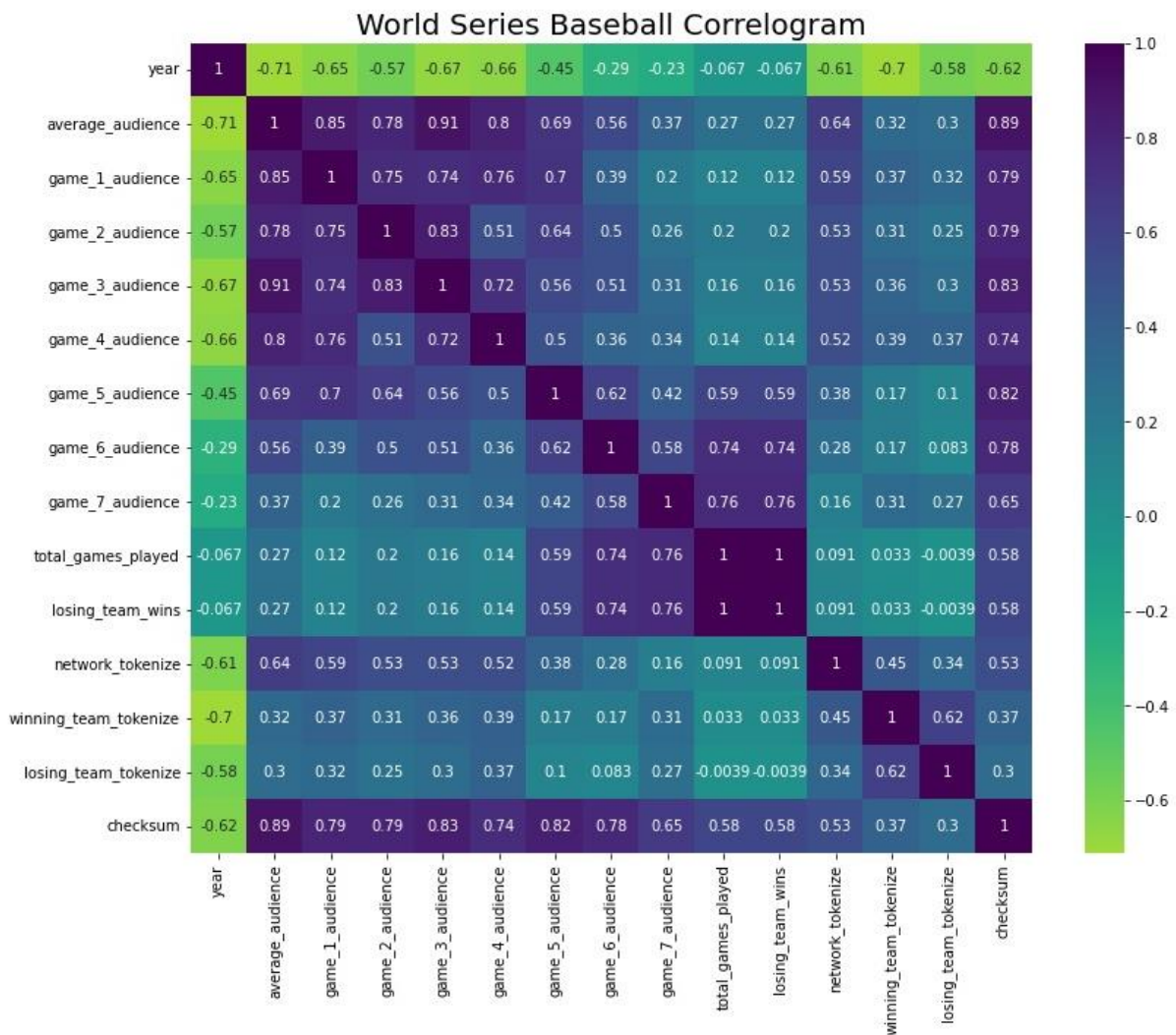
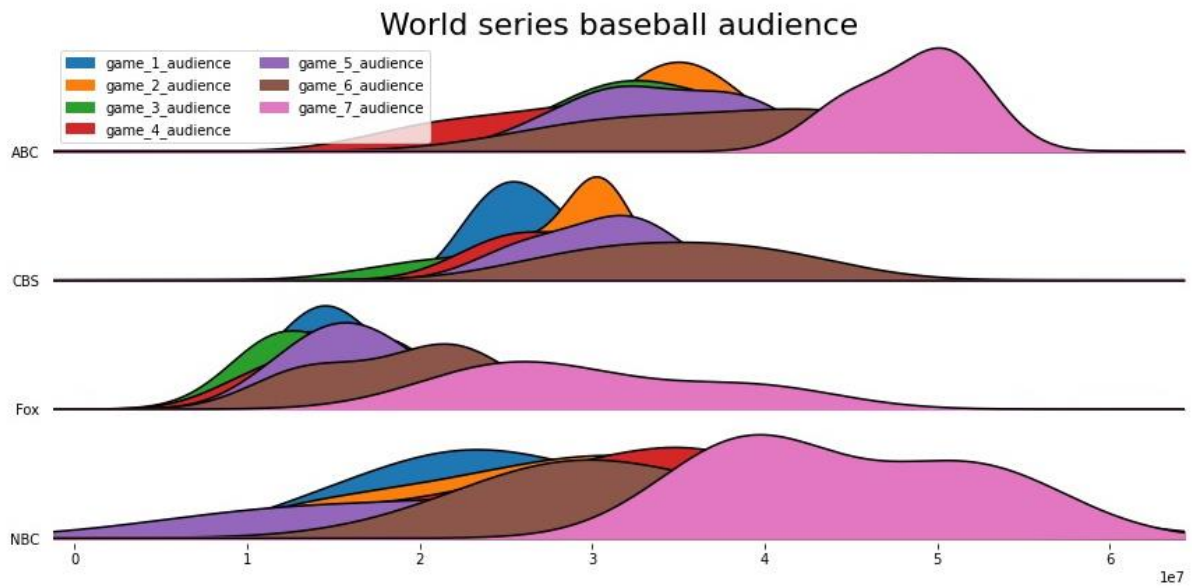


Tripcolor plot over X, Y, and Z

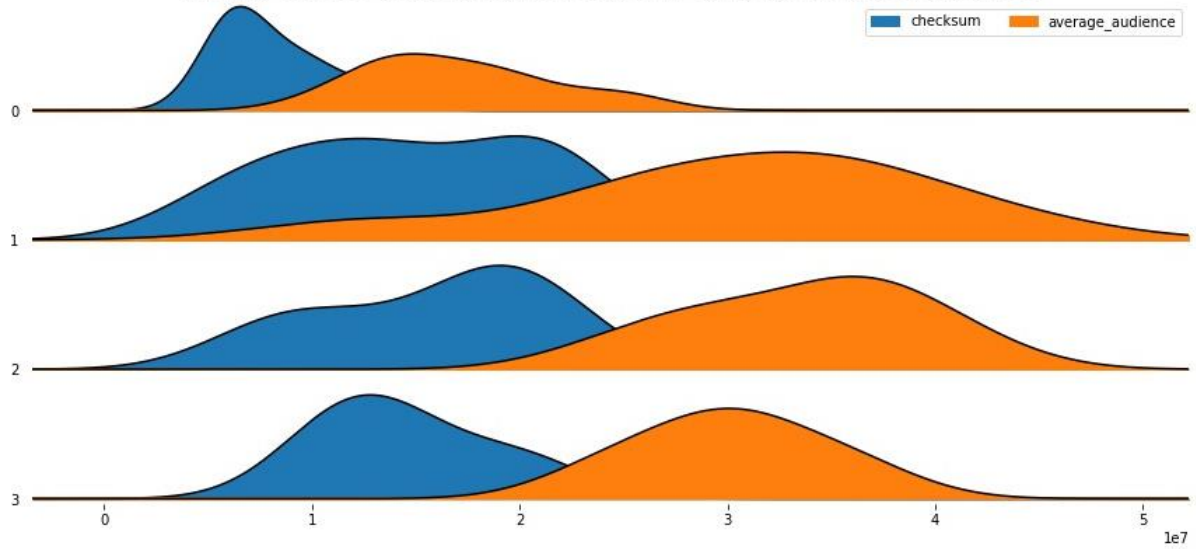


World Series Baseball





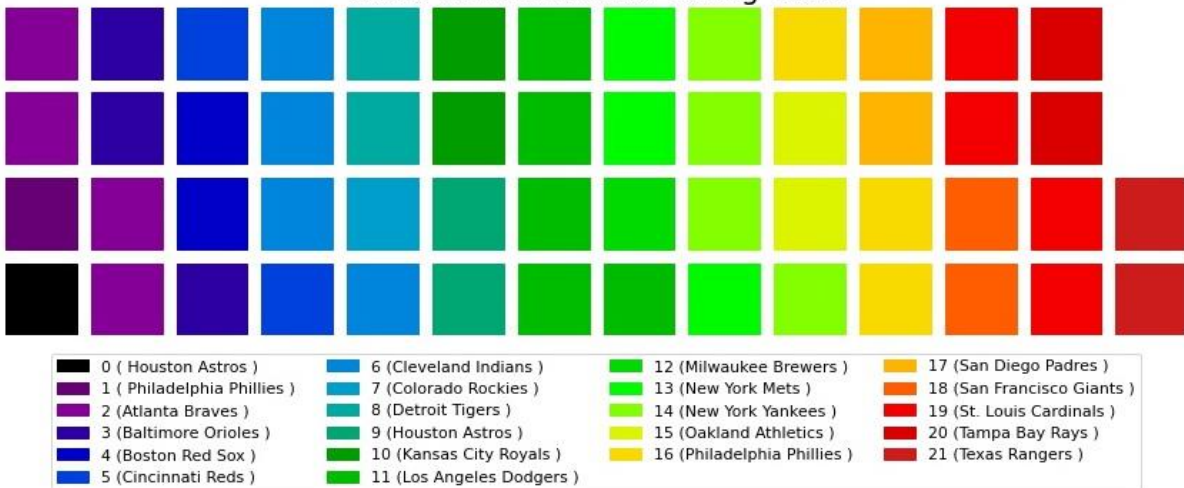
World series baseball, checksum and average audience

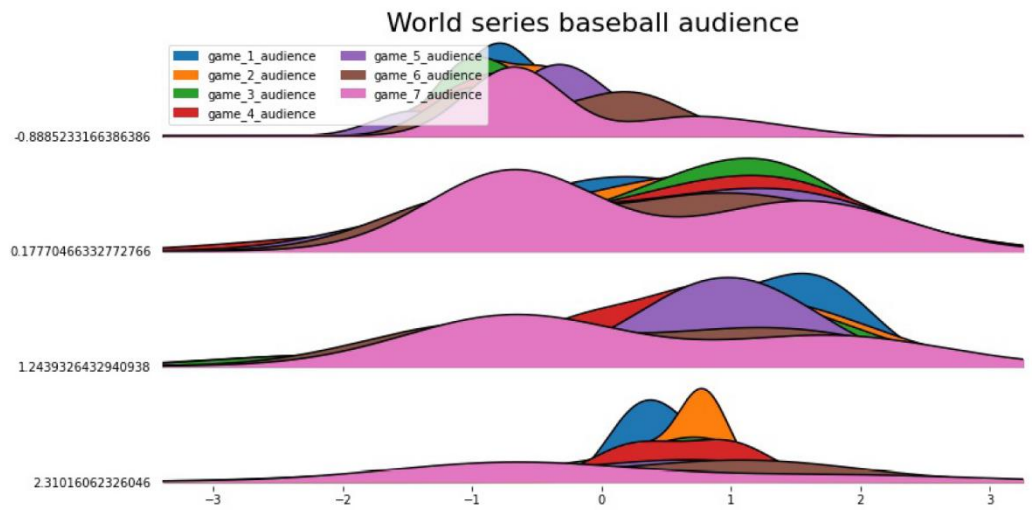
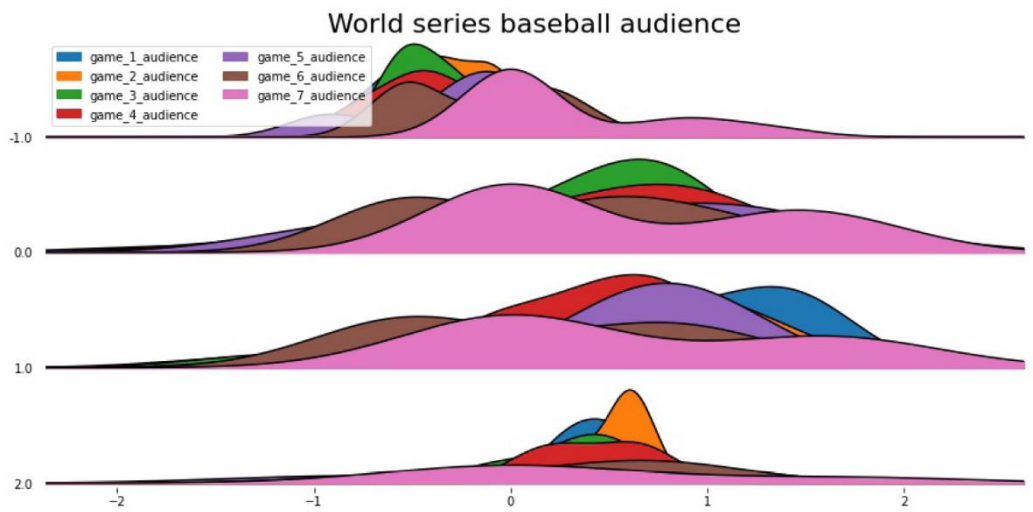
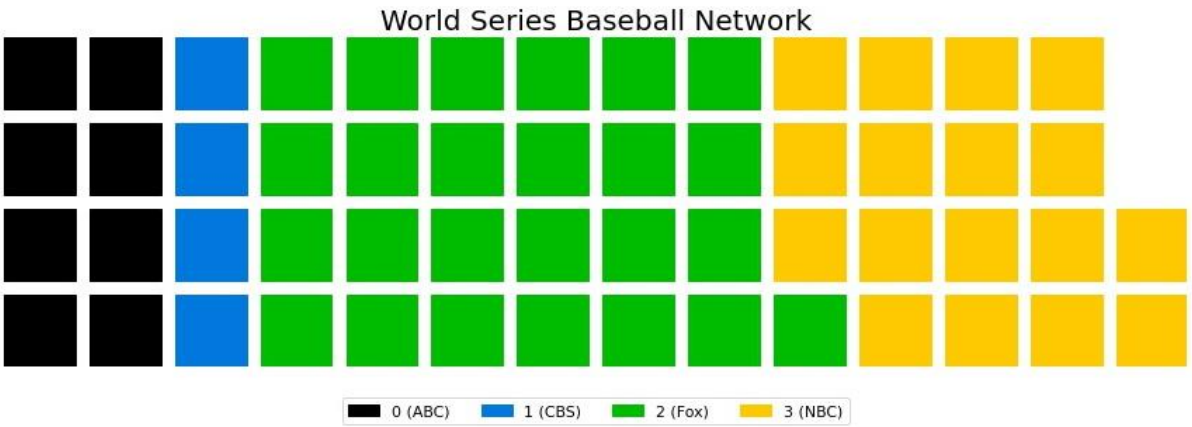


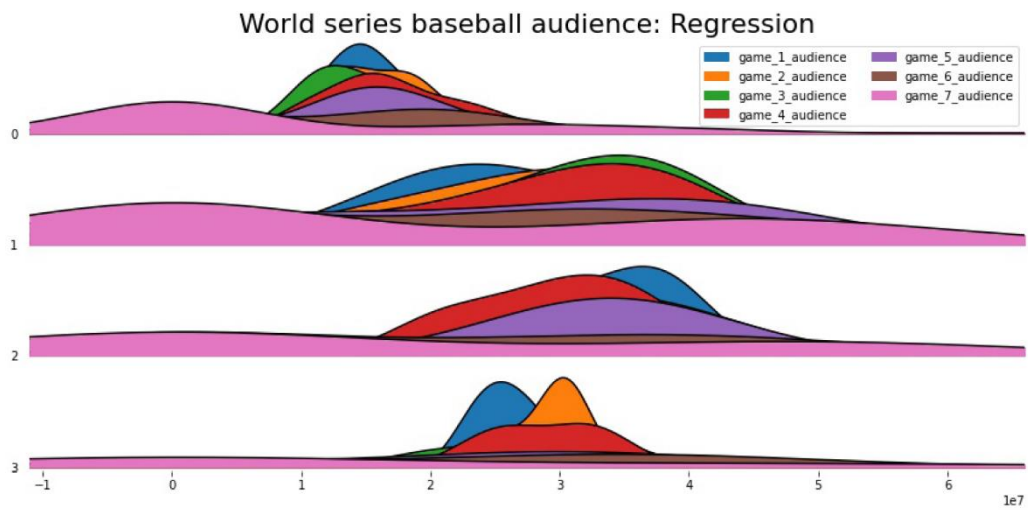
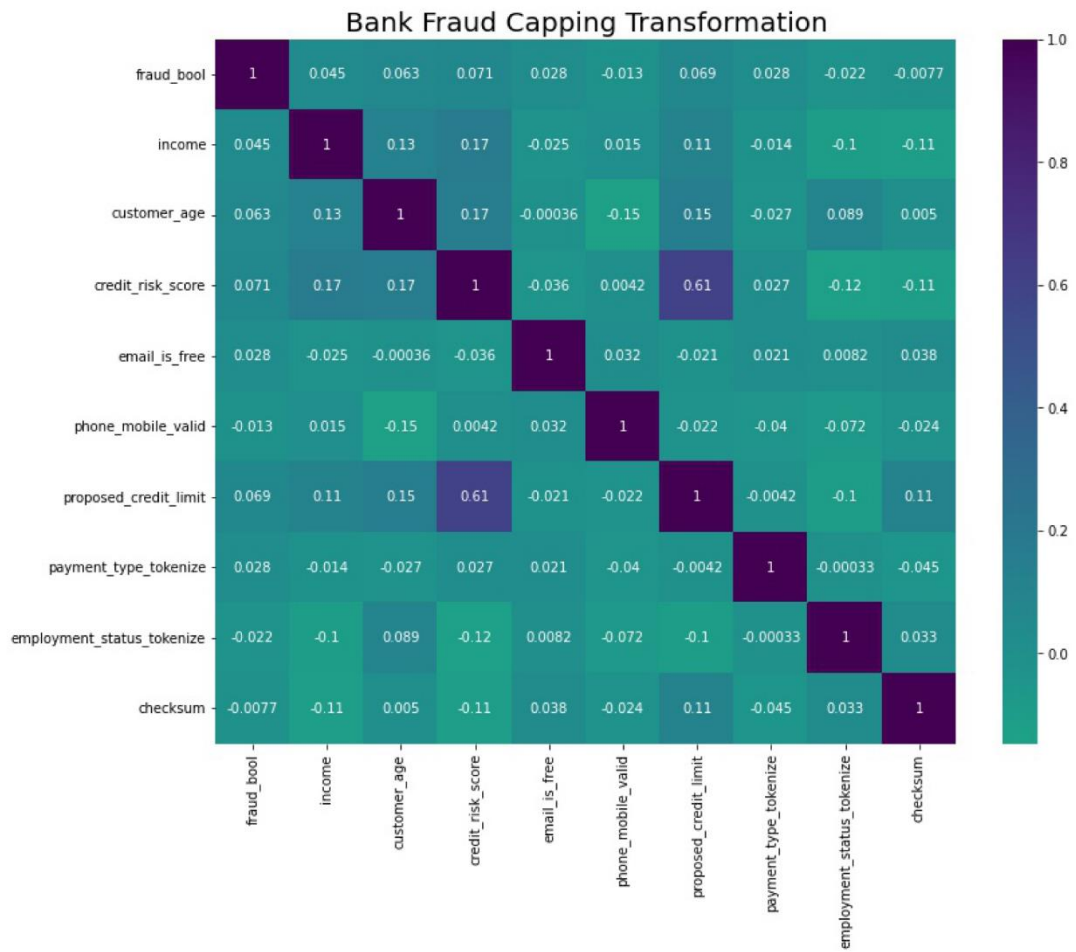
World Series Baseball Winning Team



World Series Baseball Losing Team







Bank Fraud Operator Interaction

