

# Results in tables

```
In [1]: import pandas as pd
import os
from collections import defaultdict
from IPython.display import display
```

```
In [2]: results_folder = "results"
model_types = ["cnn14_logstft", "cnn14_logmel"]
method_names = ["saliency", "gradcam", "lime", "shap"]
exp_types_mapping = {
    "cnn14_logstft": ["clean"],
    "cnn14_logmel": ["clean", "white", "room", "horse"]
}
folder_for_tables = "csvs"
```

```
In [3]: csv_files = []
for model in model_types:
    for method in method_names:
        for exp in exp_types_mapping[model]:
            dir_path = os.path.join(results_folder,
                                    model,
                                    f"{method}_{exp}",
                                    folder_for_tables)
            if not os.path.isdir(dir_path):
                continue
            for fname in os.listdir(dir_path):
                if fname.endswith(".csv"):
                    csv_files.append(os.path.join(dir_path, fname))
```

```
In [4]: experiment_results = {m: {} for m in model_types}
for fpath in csv_files:
    parts = fpath.split(os.sep)
    model_type = parts[parts.index(results_folder) + 1]
    method, exp = parts[parts.index(results_folder) + 2].split("_", 1)
    exp_name = f"{method}_{exp}"
    mask_name = os.path.splitext(parts[-1])[0]

    df = pd.read_csv(fpath)
    metrics = df.columns.difference(["sample", "is_correct"])
    means = df[metrics].mean()

    experiment_results[model_type].setdefault(exp_name, {})[mask_name] = means
```

```
In [5]: for model, exps in experiment_results.items():
    for exp_name, mask_dict in exps.items():
        experiment_results[model][exp_name] = pd.DataFrame(mask_dict).T
```

```
In [6]: experiment_results_true = {m: {} for m in model_types}
experiment_results_false = {m: {} for m in model_types}

for fpath in csv_files:
    parts = fpath.split(os.sep)
    model_type = parts[parts.index(results_folder) + 1]
    method, exp = parts[parts.index(results_folder) + 2].split("_", 1)
    exp_name = f"{method}_{exp}"
    mask_name = os.path.splitext(parts[-1])[0]

    df = pd.read_csv(fpath)
    metrics = df.columns.difference(["sample", "is_correct"])

    means_t = df[df["is_correct"] == True][metrics].mean()
    means_f = df[df["is_correct"] == False][metrics].mean()

    experiment_results_true[model_type].setdefault(exp_name, {})[mask_name] = means_t
    experiment_results_false[model_type].setdefault(exp_name, {})[mask_name] = means_f

for m in model_types:
    for exp_name, mask_dict in experiment_results_true[m].items():
        experiment_results_true[m][exp_name] = pd.DataFrame(mask_dict).T
    for exp_name, mask_dict in experiment_results_false[m].items():
        experiment_results_false[m][exp_name] = pd.DataFrame(mask_dict).T
```

```
In [7]: mask_experiment_results = {m: {} for m in model_types}
for fpath in csv_files:
    parts = fpath.split(os.sep)
    model_type = parts[parts.index(results_folder) + 1]
    method, exp = parts[parts.index(results_folder) + 2].split("_", 1)
    mask_name = os.path.splitext(parts[-1])[0]
```

```

df = pd.read_csv(fpath)
metrics = df.columns.difference(["sample", "is_correct"])
means = df[metrics].mean()

mask_experiment_results[model_type]\
    .setdefault(exp, {})\
    .setdefault(mask_name, {})[method] = means

for model, exps in mask_experiment_results.items():
    for exp_type, masks in exps.items():
        for mask_name, methods_dict in masks.items():
            mask_experiment_results[model][exp_type][mask_name] = \
                pd.DataFrame(methods_dict).T

```

```

In [8]: column_order = ["FF", "AI", "AG", "FidIn", "SPS", "AD", "COMP"]
invert_metrics = {"AD", "COMP"}
diff_color_cols = {"SPS", "COMP"}

```

```

In [9]: def highlight_extremes(col: pd.Series):
    is_invert = col.name in invert_metrics
    use_blue = col.name in diff_color_cols
    mx, mn = col.max(), col.min()
    styles = []
    for v in col:
        if use_blue:
            if is_invert:
                if v == mn: styles.append("background-color: lightblue; font-weight: bold")
                elif v == mx: styles.append("background-color: lightsteelblue; font-weight: bold")
                else: styles.append("")
            else:
                if v == mx: styles.append("background-color: lightblue; font-weight: bold")
                elif v == mn: styles.append("background-color: lightsteelblue; font-weight: bold")
                else: styles.append("")
        else:
            if is_invert:
                if v == mn: styles.append("background-color: lightgreen; font-weight: bold")
                elif v == mx: styles.append("background-color: lightcoral; font-weight: bold")
                else: styles.append("")
            else:
                if v == mx: styles.append("background-color: lightgreen; font-weight: bold")
                elif v == mn: styles.append("background-color: lightcoral; font-weight: bold")
                else: styles.append("")
    return styles

```

```

In [10]: def display_experiment_results(results):
    def _show(df, title=None):
        df = df.reindex(columns=[c for c in column_order if c in df.columns])
        styled = df.style.apply(highlight_extremes, axis=0)
        if title:
            print(f"\n--- {title} ---")
        display(styled)

    if isinstance(results, pd.DataFrame):
        _show(results)
        return

    if all(isinstance(v, pd.DataFrame) for v in results.values()):
        for name, df in results.items():
            _show(df, title=name)
        return

    for model, exps in results.items():
        print(f"\n===== MODEL: {model} =====")
        for name, df in exps.items():
            _show(df, title=name)

```

```

In [11]: def display_summary_table(df, title=None):
    order = [m for m in ["saliency", "gradcam", "lime", "shap"] if (m in df.index) or ("method" in df.columns and m in df["method"])]
    df = df.set_index("method")
    df = df.loc[order]
    df = df.reindex(columns=[c for c in column_order if c in df.columns])
    styled = df.style.apply(highlight_extremes, axis=0)
    if title:
        print(f"\n=== {title} ===")
    display(styled)

```

## Mel model - clean

```

In [12]: display_experiment_results(experiment_results["cnn14_logmel"]["saliency_clean"])

```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.923509	17.000000	0.010820	0.660000	0.173750	34.228729	3.364614
topK_30_pos	0.924342	0.000000	0.000000	0.015000	0.700006	98.380550	9.171495
minmax_pos	0.765816	0.250000	0.049572	0.087500	0.789568	94.036667	9.025774
topK_5_pos	0.760572	0.000000	0.000000	0.022500	0.949973	97.641902	7.380256
pos_thresh_50	0.034041	0.250000	0.173731	0.017500	0.998818	97.718493	3.126737
topK_50	0.925488	0.000000	0.000000	0.020000	0.500000	98.354752	9.682342
pos_thresh_25	0.266565	0.500000	0.321346	0.025000	0.990407	97.161012	5.499278
bin	0.925405	0.000000	0.000000	0.020000	0.501437	98.364178	9.679418
minmax	0.865400	3.750000	3.145995	0.270000	0.038238	77.512300	10.372001
topK_5	0.760572	0.000000	0.000000	0.022500	0.949973	97.641902	7.380256
topK_30	0.924342	0.000000	0.000000	0.015000	0.700006	98.380550	9.171495
sigmoid	0.494250	3.500000	1.586628	0.705000	0.000435	38.663598	10.375488
sigmoid_pos	0.459911	2.500000	1.171660	0.677500	0.000218	41.395925	10.375489
pos_thresh_75	0.004156	0.000000	0.000000	0.030000	0.998694	97.389923	1.330769

In [13]: `display_experiment_results(experiment_results["cnn14_logmel"]["gradcam_clean"])`

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.620931	11.750000	0.986515	0.652500	0.376861	38.971917	7.311441
topK_30_pos	0.362777	8.000000	0.610826	0.445000	0.594143	60.972215	7.798626
minmax_pos	0.431486	0.750000	0.675307	0.362500	0.396158	70.565552	9.305825
topK_5_pos	0.079183	3.250000	0.000789	0.140000	0.889483	88.374592	6.940699
pos_thresh_50	0.366132	4.250000	1.610246	0.462500	0.539787	60.367838	8.580185
topK_50	0.525585	4.500000	2.390889	0.547500	0.499100	50.501074	9.684130
pos_thresh_25	0.599464	12.250000	2.903764	0.685000	0.347608	37.228447	7.528186
bin	0.718901	19.500000	2.312055	0.782500	0.195505	24.363625	4.918478
minmax	0.513961	1.250000	0.771900	0.392500	0.335331	66.672894	10.150634
topK_5	0.030628	0.000000	0.000000	0.095000	0.948803	93.808333	7.403008
topK_30	0.273394	2.250000	0.820703	0.352500	0.698777	71.267326	9.175542
sigmoid	0.503142	2.000000	0.972570	0.677500	0.026291	41.579207	10.373997
sigmoid_pos	0.509011	2.750000	1.287992	0.672500	0.021327	41.113377	9.803656
pos_thresh_75	0.158799	0.250000	0.219627	0.220000	0.782398	83.862255	7.872705

In [14]: `display_experiment_results(experiment_results["cnn14_logmel"]["lime_clean"])`

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.827086	13.500000	5.598555	0.750000	0.461311	30.218063	9.410670
topK_30_pos	0.623726	10.000000	4.870080	0.542500	0.674179	49.493281	9.251675
minmax_pos	0.757147	4.000000	1.739817	0.437500	0.547565	60.697763	9.736422
topK_5_pos	0.159315	2.000000	1.222972	0.305000	0.913795	72.973278	7.872777
pos_thresh_50	0.486153	3.000000	1.786661	0.472500	0.748973	57.984101	8.786603
topK_50	0.825345	13.750000	6.322732	0.740000	0.476548	31.117691	9.727269
pos_thresh_25	0.802991	9.750000	4.796789	0.700000	0.561653	35.022268	9.408597
bin	0.899183	28.750000	12.359402	0.932500	0.200351	8.067020	9.534232
minmax	0.788818	4.750000	2.500606	0.482500	0.392213	56.327209	10.072025
topK_5	0.159315	2.000000	1.222972	0.305000	0.913795	72.973278	7.872777
topK_30	0.623726	10.000000	4.870080	0.542500	0.674179	49.493281	9.251675
sigmoid	0.497470	2.000000	0.954793	0.677500	0.014309	42.379379	10.374871
sigmoid_pos	0.496602	2.000000	0.963045	0.675000	0.013037	42.468471	10.374927
pos_thresh_75	0.238406	3.250000	1.655848	0.350000	0.861821	68.189178	8.186731

```
In [15]: display_experiment_results(experiment_results["cnn14_logme1"]["shap_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.927128	0.000000	0.000000	0.017500	0.500000	98.489136	9.682342
topK_30_pos	0.920323	0.000000	0.000000	0.015000	0.700006	98.376693	9.171495
minmax_pos	0.742941	0.000000	0.000000	0.017500	0.730384	98.140806	9.325663
topK_5_pos	0.644693	0.000000	0.000000	0.027500	0.949973	97.529152	7.380256
pos_thresh_50	0.059368	0.250000	0.190206	0.025000	0.996374	97.753463	4.424030
topK_50	0.927128	0.000000	0.000000	0.017500	0.500000	98.489136	9.682342
pos_thresh_25	0.514186	0.000000	0.000000	0.020000	0.955756	97.999591	7.109132
bin	0.927023	0.000000	0.000000	0.015000	0.488779	98.448432	9.704492
minmax	0.896360	0.000000	0.000000	0.080000	0.069193	93.939058	10.366691
topK_5	0.644693	0.000000	0.000000	0.027500	0.949973	97.529152	7.380256
topK_30	0.920323	0.000000	0.000000	0.015000	0.700006	98.376693	9.171495
sigmoid	0.411541	1.750000	0.706020	0.635000	0.001600	45.859315	10.375483
sigmoid_pos	0.413540	2.000000	0.717767	0.632500	0.000816	45.765673	10.375487
pos_thresh_75	0.000941	0.000000	0.000000	0.027500	0.998980	97.767977	1.983555

## STFT model - clean

```
In [16]: display_experiment_results(experiment_results["cnn14_logstft"]["saliency_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.804243	21.250000	0.005357	0.515000	0.246247	48.376074	5.221556
topK_30_pos	0.775971	1.000000	0.695137	0.030000	0.699991	96.617813	10.091335
minmax_pos	0.793905	1.250000	0.374701	0.045000	0.783134	94.492255	9.997833
topK_5_pos	0.617889	0.750000	0.579243	0.030000	0.949986	96.632662	8.299783
pos_thresh_50	0.031167	0.500000	0.253879	0.030000	0.999009	96.453913	3.677172
topK_50	0.791540	0.500000	0.431110	0.027500	0.499994	96.391078	10.602145
pos_thresh_25	0.219041	1.250000	0.177886	0.040000	0.991120	95.720335	6.327378
bin	0.791281	0.500000	0.430915	0.027500	0.500274	96.420557	10.601551
minmax	0.788165	10.000000	6.286535	0.342500	0.038138	66.196693	11.292008
topK_5	0.617889	0.750000	0.579243	0.030000	0.949986	96.632662	8.299783
topK_30	0.775971	1.000000	0.695137	0.030000	0.699991	96.617813	10.091335
sigmoid	0.643469	2.500000	0.838001	0.202500	0.000142	79.326670	11.295279
sigmoid_pos	0.641400	2.000000	0.750599	0.197500	0.000071	79.565167	11.295279
pos_thresh_75	0.006663	0.000000	0.000000	0.010000	0.997741	97.268040	1.625156

```
In [17]: display_experiment_results(experiment_results["cnn14_logstft"]["gradcam_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.724579	24.750000	0.217910	0.702500	0.224974	31.075000	4.771012
topK_30_pos	0.572529	16.250000	0.219069	0.517500	0.442721	50.726126	6.382848
minmax_pos	0.320230	0.500000	0.087757	0.100000	0.610100	90.744003	9.346533
topK_5_pos	0.191031	6.250000	0.071148	0.157500	0.835978	84.384347	7.304013
pos_thresh_50	0.266586	0.250000	0.207937	0.117500	0.762384	89.263126	8.492369
topK_50	0.585838	4.000000	1.152864	0.437500	0.499938	59.861858	10.602257
pos_thresh_25	0.398511	2.250000	0.973528	0.267500	0.600928	73.924376	9.142811
bin	0.474595	7.500000	1.070762	0.497500	0.451437	54.120088	8.475080
minmax	0.567456	1.750000	0.520995	0.262500	0.295466	75.694391	11.139094
topK_5	0.114764	0.250000	0.070154	0.040000	0.949974	95.877295	8.300039
topK_30	0.425481	1.500000	0.694756	0.272500	0.699953	76.859205	10.091461
sigmoid	0.634957	1.750000	0.747174	0.190000	0.014194	80.017202	11.294890
sigmoid_pos	0.645253	2.250000	0.778206	0.205000	0.007431	79.146000	10.504438
pos_thresh_75	0.101793	0.000000	0.000000	0.050000	0.879805	95.176441	7.329255

In [18]: `display_experiment_results(experiment_results["cnn14_logstft"] ["lime_clean"])`

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.765314	16.750000	8.681377	0.452500	0.472411	55.331106	10.164076
topK_30_pos	0.694155	10.000000	5.252163	0.337500	0.691593	67.192280	10.118696
minmax_pos	0.633585	1.000000	0.381902	0.180000	0.621340	84.303404	10.527688
topK_5_pos	0.250140	0.750000	0.135246	0.135000	0.936524	89.718892	8.527748
pos_thresh_50	0.431767	0.750000	0.356323	0.182500	0.868335	84.286786	9.100906
topK_50	0.764448	15.500000	9.093660	0.427500	0.493322	57.746470	10.615335
pos_thresh_25	0.676561	5.750000	2.650058	0.335000	0.697021	68.592485	9.986101
bin	0.790285	26.000000	14.205455	0.685000	0.272667	32.028679	10.931619
minmax	0.685044	3.000000	1.561553	0.237500	0.311617	77.522342	11.105058
topK_5	0.250140	0.750000	0.135246	0.135000	0.936524	89.718892	8.527748
topK_30	0.694155	10.000000	5.252163	0.337500	0.691593	67.192280	10.118696
sigmoid	0.647775	2.500000	0.875570	0.217500	0.007533	78.297433	11.295110
sigmoid_pos	0.648529	2.500000	0.878564	0.222500	0.006348	78.271001	11.295134
pos_thresh_75	0.213145	0.250000	0.078971	0.122500	0.943129	90.821143	8.265318

In [19]: `display_experiment_results(experiment_results["cnn14_logstft"] ["shap_clean"])`

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.802137	3.750000	0.377866	0.117500	0.448744	88.001432	9.515425
topK_30_pos	0.763906	0.500000	0.387102	0.027500	0.699991	97.378508	10.091335
minmax_pos	0.455331	0.250000	0.026532	0.020000	0.733023	96.696681	10.238195
topK_5_pos	0.444995	0.250000	0.030072	0.017500	0.949986	96.534742	8.299783
pos_thresh_50	0.042832	0.750000	0.169498	0.010000	0.997583	97.548774	4.935396
topK_50	0.797198	0.500000	0.377006	0.020000	0.499994	97.530510	10.602145
pos_thresh_25	0.325835	0.000000	0.000000	0.020000	0.963614	97.014994	7.850671
bin	0.796341	0.500000	0.376295	0.020000	0.491457	97.488113	10.618963
minmax	0.758164	1.250000	0.592583	0.085000	0.072735	92.499200	11.285742
topK_5	0.444995	0.250000	0.030072	0.017500	0.949986	96.534742	8.299783
topK_30	0.763906	0.500000	0.387102	0.027500	0.699991	97.378508	10.091335
sigmoid	0.638561	2.000000	0.676899	0.190000	0.000569	79.908981	11.295279
sigmoid_pos	0.638853	2.000000	0.679504	0.192500	0.000291	79.869016	11.295279
pos_thresh_75	0.000926	0.250000	0.015382	0.012500	0.998292	97.660085	2.156133

# Mel model clean - correct

```
In [20]: display_experiment_results(experiment_results_true["cnn14_logmel"] ["saliency_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.945407	17.073171	0.011396	0.680217	0.163957	32.330323	3.174969
topK_30_pos	0.945672	0.000000	0.000000	0.016260	0.700006	98.377567	9.171495
minmax_pos	0.779311	0.000000	0.000000	0.092141	0.788313	94.163711	9.036151
topK_5_pos	0.772949	0.000000	0.000000	0.024390	0.949973	97.640883	7.380256
pos_thresh_50	0.029163	0.271003	0.188326	0.018970	0.998817	97.861775	3.133157
topK_50	0.946665	0.000000	0.000000	0.021680	0.500000	98.339428	9.682342
pos_thresh_25	0.259918	0.271003	0.169656	0.021680	0.990384	97.379375	5.511346
bin	0.946579	0.000000	0.000000	0.021680	0.501572	98.350047	9.679155
minmax	0.882767	4.065041	3.410292	0.279133	0.038666	76.540316	10.371953
topK_5	0.772949	0.000000	0.000000	0.024390	0.949973	97.640883	7.380256
topK_30	0.945672	0.000000	0.000000	0.016260	0.700006	98.377567	9.171495
sigmoid	0.487210	3.252033	1.559783	0.731707	0.000438	36.225326	10.375488
sigmoid_pos	0.451754	2.710027	1.270092	0.710027	0.000220	38.730136	10.375489
pos_thresh_75	0.005135	0.000000	0.000000	0.032520	0.998687	97.610025	1.324031

```
In [21]: display_experiment_results(experiment_results_true["cnn14_logmel"] ["gradcam_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.630246	10.569106	0.885289	0.666667	0.384207	38.209700	7.453223
topK_30_pos	0.362149	7.046070	0.438331	0.447154	0.604240	61.349777	7.931774
minmax_pos	0.442164	0.542005	0.497571	0.379404	0.389012	69.407910	9.366113
topK_5_pos	0.077364	2.710027	0.000678	0.138211	0.892246	88.718802	6.961431
pos_thresh_50	0.376808	4.065041	1.477375	0.479675	0.535387	58.944749	8.656051
topK_50	0.534547	4.336043	2.269330	0.577236	0.499126	48.482414	9.684078
pos_thresh_25	0.619630	12.466125	2.900091	0.712737	0.339949	35.056717	7.534071
bin	0.743637	19.241192	2.057722	0.802168	0.185910	22.318007	4.848208
minmax	0.523824	1.084011	0.568076	0.411924	0.336639	65.374030	10.149080
topK_5	0.028273	0.000000	0.000000	0.094851	0.948832	93.922137	7.402466
topK_30	0.275450	2.168022	0.666223	0.371274	0.698775	70.113108	9.175550
sigmoid	0.501385	2.168022	1.054277	0.712737	0.027383	38.411951	10.373904
sigmoid_pos	0.507619	2.981030	1.396197	0.712737	0.022402	37.906985	9.839989
pos_thresh_75	0.162608	0.271003	0.238079	0.227642	0.782878	83.316661	7.925729

```
In [22]: display_experiment_results(experiment_results_true["cnn14_logmel"] ["lime_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.847274	13.279133	5.791467	0.769648	0.463530	28.938404	9.463903
topK_30_pos	0.632108	9.485095	4.781647	0.555556	0.673927	48.656539	9.252500
minmax_pos	0.772356	3.794038	1.600055	0.460705	0.543287	59.272476	9.750867
topK_5_pos	0.145929	1.355014	0.881449	0.311653	0.912932	72.477098	7.881742
pos_thresh_50	0.492048	2.710027	1.588524	0.490515	0.744019	56.764825	8.818588
topK_50	0.845376	13.821138	6.459969	0.764228	0.476298	29.388786	9.727778
pos_thresh_25	0.819008	9.485095	4.675122	0.731707	0.555752	32.783006	9.432027
bin	0.920931	28.726287	12.686897	0.953930	0.195358	6.189071	9.547627
minmax	0.805307	4.607046	2.325402	0.504065	0.394354	54.714965	10.071379
topK_5	0.145929	1.355014	0.881449	0.311653	0.912932	72.477098	7.881742
topK_30	0.632108	9.485095	4.781647	0.555556	0.673927	48.656539	9.252500
sigmoid	0.493142	2.168022	1.035006	0.704607	0.014497	39.768185	10.374856
sigmoid_pos	0.492211	2.168022	1.043951	0.701897	0.013297	39.867365	10.374910
pos_thresh_75	0.230053	2.710027	1.442576	0.363144	0.858715	67.244040	8.211671

```
In [23]: display_experiment_results(experiment_results_true["cnn14_logmel"]["shap_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.948405	0.000000	0.000000	0.018970	0.500000	98.487189	9.682342
topK_30_pos	0.942526	0.000000	0.000000	0.016260	0.700006	98.375260	9.171495
minmax_pos	0.756791	0.000000	0.000000	0.018970	0.730700	98.266224	9.324414
topK_5_pos	0.660258	0.000000	0.000000	0.027100	0.949973	97.559801	7.380256
pos_thresh_50	0.056379	0.000000	0.000000	0.021680	0.996380	97.994332	4.427683
topK_50	0.948405	0.000000	0.000000	0.018970	0.500000	98.487189	9.682342
pos_thresh_25	0.524006	0.000000	0.000000	0.018970	0.955952	98.076177	7.102215
bin	0.948274	0.000000	0.000000	0.016260	0.488946	98.450221	9.704169
minmax	0.916186	0.000000	0.000000	0.084011	0.069038	93.863099	10.366718
topK_5	0.660258	0.000000	0.000000	0.027100	0.949973	97.559801	7.380256
topK_30	0.942526	0.000000	0.000000	0.016260	0.700006	98.375260	9.171495
sigmoid	0.402466	1.897019	0.765333	0.672087	0.001581	43.059117	10.375483
sigmoid_pos	0.404587	2.168022	0.778068	0.669377	0.000807	42.974514	10.375487
pos_thresh_75	0.001608	0.000000	0.000000	0.024390	0.998985	98.047735	1.986147

## Mel model clean - incorrect

```
In [24]: display_experiment_results(experiment_results_false["cnn14_logmel"]["saliency_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.662846	16.129032	0.003964	0.419355	0.290323	56.825893	5.622005
topK_30_pos	0.670454	0.000000	0.000000	0.000000	0.700006	98.416065	9.171495
minmax_pos	0.605179	3.225806	0.639638	0.032258	0.804512	92.524422	8.902249
topK_5_pos	0.613254	0.000000	0.000000	0.000000	0.949973	97.654032	7.380256
pos_thresh_50	0.092098	0.000000	0.000000	0.000000	0.998837	96.012966	3.050318
topK_50	0.673416	0.000000	0.000000	0.000000	0.500000	98.537152	9.682342
pos_thresh_25	0.345686	3.225806	2.126949	0.064516	0.990689	94.561785	5.355628
bin	0.673358	0.000000	0.000000	0.000000	0.499835	98.532379	9.682547
minmax	0.658679	0.000000	0.000000	0.161290	0.033137	89.082037	10.372571
topK_5	0.613254	0.000000	0.000000	0.000000	0.949973	97.654032	7.380256
topK_30	0.670454	0.000000	0.000000	0.000000	0.700006	98.416065	9.171495
sigmoid	0.578050	6.451613	1.906163	0.387097	0.000389	67.686891	10.375488
sigmoid_pos	0.557008	0.000000	0.000000	0.290323	0.000195	73.127409	10.375489
pos_thresh_75	-0.007497	0.000000	0.000000	0.000000	0.998781	94.770001	1.410973

In [25]: `display_experiment_results(experiment_results_false["cnn14_logmel"](["gradcam_clean"]))`

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.510053	25.806452	2.191429	0.483871	0.289428	48.044750	5.623778
topK_30_pos	0.370261	19.354839	2.664075	0.419355	0.473962	56.478008	6.213730
minmax_pos	0.304390	3.225806	2.790927	0.161290	0.481220	84.345221	8.588200
topK_5_pos	0.100836	9.677419	0.002109	0.161290	0.856589	84.277379	6.693920
pos_thresh_50	0.239048	6.451613	3.191839	0.258065	0.592162	77.307186	7.677133
topK_50	0.418908	6.451613	3.837831	0.193548	0.498788	74.529634	9.684749
pos_thresh_25	0.359428	9.677419	2.947487	0.354839	0.438772	63.079039	7.458135
bin	0.424467	22.580645	5.339440	0.548387	0.309716	48.713074	5.754914
minmax	0.396560	3.225806	3.198057	0.161290	0.319760	82.133567	10.169128
topK_5	0.058653	0.000000	0.000000	0.096774	0.948455	92.453693	7.409452
topK_30	0.248931	3.225806	2.659505	0.129032	0.698807	85.006246	9.175436
sigmoid	0.524053	0.000000	0.000000	0.258065	0.013287	79.279771	10.375098
sigmoid_pos	0.525585	0.000000	0.000000	0.193548	0.008527	79.279782	9.371171
pos_thresh_75	0.113465	0.000000	0.000000	0.129032	0.776680	90.356591	7.241546

In [26]: `display_experiment_results(experiment_results_false["cnn14_logmel"](["lime_clean"]))`

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.586783	16.129032	3.302271	0.516129	0.434898	45.450130	8.777023
topK_30_pos	0.523954	16.129032	5.922719	0.387097	0.677181	59.453209	9.241862
minmax_pos	0.576111	6.451613	3.403436	0.161290	0.598479	77.663271	9.564484
topK_5_pos	0.318655	9.677419	5.288197	0.225806	0.924064	78.879420	7.766068
pos_thresh_50	0.415989	6.451613	4.145134	0.258065	0.807937	72.497425	8.405885
topK_50	0.586913	12.903226	4.689164	0.451613	0.479526	51.697237	9.721214
pos_thresh_25	0.612332	12.903226	6.245024	0.322581	0.631892	61.676711	9.129704
bin	0.640306	29.032258	8.461155	0.677419	0.259775	30.420668	9.374790
minmax	0.592543	6.451613	4.586105	0.225806	0.366728	75.518108	10.079711
topK_5	0.318655	9.677419	5.288197	0.225806	0.924064	78.879420	7.766068
topK_30	0.523954	16.129032	5.922719	0.387097	0.677181	59.453209	9.241862
sigmoid	0.548984	0.000000	0.000000	0.354839	0.012076	73.461004	10.375050
sigmoid_pos	0.548869	0.000000	0.000000	0.354839	0.009937	73.430027	10.375136
pos_thresh_75	0.337834	9.677419	4.194467	0.193548	0.898795	79.439362	7.889867



```
In [27]: display_experiment_results(experiment_results_false["cnn14_logmel"]["shap_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.673863	0.000000	0.000000	0.000000	0.500000	98.512308	9.682342
topK_30_pos	0.656046	0.000000	0.000000	0.000000	0.700006	98.393752	9.171495
minmax_pos	0.578087	0.000000	0.000000	0.000000	0.726615	96.647926	9.340534
topK_5_pos	0.459420	0.000000	0.000000	0.032258	0.949973	97.164324	7.380256
pos_thresh_50	0.094950	3.225806	2.454268	0.064516	0.996303	94.886344	4.380559
topK_50	0.673863	0.000000	0.000000	0.000000	0.500000	98.512308	9.682342
pos_thresh_25	0.397294	0.000000	0.000000	0.032258	0.953419	97.087980	7.191464
bin	0.674068	0.000000	0.000000	0.000000	0.486790	98.427143	9.708335
minmax	0.660365	0.000000	0.000000	0.032258	0.071041	94.843223	10.366376
topK_5	0.459420	0.000000	0.000000	0.032258	0.949973	97.164324	7.380256
topK_30	0.656046	0.000000	0.000000	0.000000	0.700006	98.393752	9.171495
sigmoid	0.519564	0.000000	0.000000	0.193548	0.001829	79.190700	10.375480
sigmoid_pos	0.520112	0.000000	0.000000	0.193548	0.000934	78.989477	10.375486
pos_thresh_75	-0.007000	0.000000	0.000000	0.064516	0.998926	94.437956	1.952701

## STFT model clean - correct

```
In [28]: display_experiment_results(experiment_results_true["cnn14_logstft"]["saliency_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.866403	21.153846	0.006039	0.519231	0.245189	47.934814	5.199129
topK_30_pos	0.838052	0.320513	0.019933	0.028846	0.699991	96.769077	10.091335
minmax_pos	0.851453	0.320513	0.038429	0.035256	0.781555	95.605697	10.009087
topK_5_pos	0.647590	0.000000	0.000000	0.028846	0.949986	96.805100	8.299783
pos_thresh_50	0.024769	0.320513	0.133165	0.028846	0.999013	96.935649	3.706453
topK_50	0.853016	0.000000	0.000000	0.028846	0.499994	96.267474	10.602145
pos_thresh_25	0.206891	0.641026	0.037393	0.044872	0.991009	95.848175	6.354969
bin	0.852802	0.000000	0.000000	0.028846	0.500330	96.315157	10.601439
minmax	0.848827	8.333333	5.478854	0.371795	0.038374	65.418301	11.291996
topK_5	0.647590	0.000000	0.000000	0.028846	0.949986	96.805100	8.299783
topK_30	0.838052	0.320513	0.019933	0.028846	0.699991	96.769077	10.091335
sigmoid	0.678723	1.923077	0.405414	0.237179	0.000143	77.095965	11.295279
sigmoid_pos	0.676650	1.282051	0.318633	0.230769	0.000071	77.316344	11.295279
pos_thresh_75	0.005165	0.000000	0.000000	0.009615	0.997864	97.744719	1.667829

```
In [29]: display_experiment_results(experiment_results_true["cnn14_logstft"]["gradcam_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.777619	21.794872	0.227320	0.698718	0.237156	31.810478	5.029264
topK_30_pos	0.594974	14.102564	0.279717	0.519231	0.464397	51.586828	6.695281
minmax_pos	0.337215	0.000000	0.000000	0.108974	0.618437	90.448146	9.652682
topK_5_pos	0.171583	4.166667	0.090463	0.121795	0.873857	88.453087	7.634905
pos_thresh_50	0.281354	0.320513	0.266586	0.128205	0.777310	88.980275	8.772010
topK_50	0.621108	3.205128	1.185983	0.490385	0.499945	56.917732	10.602242
pos_thresh_25	0.427502	2.243590	0.786154	0.314103	0.609550	71.119038	9.441787
bin	0.510466	7.051282	1.019737	0.560897	0.452052	49.886688	8.809827
minmax	0.596427	0.961538	0.059732	0.307692	0.302410	73.605895	11.132301
topK_5	0.112911	0.320513	0.089942	0.041667	0.949976	96.201768	8.299985
topK_30	0.438422	0.961538	0.497975	0.314103	0.699965	74.869156	10.091422
sigmoid	0.669639	0.961538	0.350558	0.221154	0.015088	77.747138	11.294846
sigmoid_pos	0.681245	1.602564	0.399060	0.240385	0.008155	76.818237	10.752045
pos_thresh_75	0.098735	0.000000	0.000000	0.060897	0.900679	95.351209	7.564960

```
In [30]: display_experiment_results(experiment_results_true["cnn14_logstft"]["lime_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.819873	16.025641	8.791465	0.487179	0.477505	52.765375	10.275113
topK_30_pos	0.736013	9.935897	5.330596	0.378205	0.691351	64.301468	10.119489
minmax_pos	0.663173	0.320513	0.161831	0.195513	0.618076	82.921527	10.539677
topK_5_pos	0.240962	0.320513	0.047541	0.153846	0.936539	89.954697	8.527599
pos_thresh_50	0.439892	0.641026	0.345008	0.211538	0.865942	82.839096	9.122823
topK_50	0.819409	14.743590	8.993968	0.471154	0.493327	54.287029	10.615327
pos_thresh_25	0.718068	6.410256	2.899278	0.391026	0.694511	64.846598	9.999663
bin	0.852587	26.282051	14.748848	0.740385	0.263340	27.300729	10.937771
minmax	0.723457	1.923077	0.862809	0.269231	0.323994	75.558178	11.092808
topK_5	0.240962	0.320513	0.047541	0.153846	0.936539	89.954697	8.527599
topK_30	0.736013	9.935897	5.330596	0.378205	0.691351	64.301468	10.119489
sigmoid	0.683565	1.923077	0.589405	0.256410	0.008007	75.868932	11.295089
sigmoid_pos	0.684526	1.923077	0.588550	0.259615	0.006876	75.819090	11.295114
pos_thresh_75	0.209489	0.000000	0.000000	0.141026	0.941131	90.261793	8.309398

```
In [31]: display_experiment_results(experiment_results_true["cnn14_logstft"]["shap_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.866932	3.525641	0.001048	0.128205	0.442302	86.934263	9.378820
topK_30_pos	0.819402	0.320513	0.247077	0.025641	0.699991	97.677030	10.091335
minmax_pos	0.494791	0.000000	0.000000	0.022436	0.733112	97.260683	10.237796
topK_5_pos	0.476380	0.000000	0.000000	0.012821	0.949986	97.279296	8.299783
pos_thresh_50	0.045245	0.641026	0.145455	0.009615	0.997592	97.715419	4.940646
topK_50	0.860424	0.000000	0.000000	0.019231	0.499994	97.549404	10.602145
pos_thresh_25	0.342238	0.000000	0.000000	0.022436	0.963501	97.027136	7.854634
bin	0.859379	0.000000	0.000000	0.019231	0.491929	97.497706	10.618033
minmax	0.817470	0.641026	0.473305	0.089744	0.072855	92.578307	11.285715
topK_5	0.476380	0.000000	0.000000	0.012821	0.949986	97.279296	8.299783
topK_30	0.819402	0.320513	0.247077	0.025641	0.699991	97.677030	10.091335
sigmoid	0.673730	1.282051	0.249070	0.224359	0.000562	77.652291	11.295279
sigmoid_pos	0.674058	1.282051	0.252754	0.227564	0.000287	77.608474	11.295279
pos_thresh_75	0.000827	0.320513	0.019721	0.012821	0.998282	97.945908	2.146913

## STFT model clean - incorrect

In [32]: `display_experiment_results(experiment_results_false["cnn14_logstft"]["saliency_clean"])`

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.583857	21.590909	0.002940	0.500000	0.249997	49.940538	5.301072
topK_30_pos	0.555864	3.409091	3.089041	0.034091	0.699991	96.081514	10.091335
minmax_pos	0.589870	4.545455	1.566937	0.079545	0.788733	90.544596	9.957932
topK_5_pos	0.512585	3.409091	2.632922	0.034091	0.949986	96.021290	8.299783
pos_thresh_50	0.053851	1.136364	0.681866	0.034091	0.998995	94.745940	3.573356
topK_50	0.573580	2.272727	1.959591	0.022727	0.499994	96.829311	10.602145
pos_thresh_25	0.262116	3.409091	0.675997	0.022727	0.991514	95.267087	6.229557
bin	0.573162	2.272727	1.958704	0.022727	0.500076	96.794247	10.601947
minmax	0.573092	15.909091	9.150131	0.238636	0.037301	68.956449	11.292049
topK_5	0.512585	3.409091	2.632922	0.034091	0.949986	96.021290	8.299783
topK_30	0.555864	3.409091	3.089041	0.034091	0.699991	96.081514	10.091335
sigmoid	0.518476	4.545455	2.371716	0.079545	0.000139	87.235531	11.295279
sigmoid_pos	0.516426	4.545455	2.282114	0.079545	0.000069	87.538266	11.295279
pos_thresh_75	0.011976	0.000000	0.000000	0.011364	0.997306	95.577996	1.473861

In [33]: `display_experiment_results(experiment_results_false["cnn14_logstft"]["gradcam_clean"])`

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.536529	35.227273	0.184548	0.715909	0.181783	28.467397	3.855392
topK_30_pos	0.492952	23.863636	0.004043	0.511364	0.365870	47.674545	5.275132
minmax_pos	0.260011	2.272727	0.398896	0.068182	0.580542	91.792949	8.261096
topK_5_pos	0.259980	13.636364	0.002665	0.284091	0.701678	69.958815	6.130854
pos_thresh_50	0.214227	0.000000	0.000000	0.079545	0.709466	90.265962	7.500912
topK_50	0.460792	6.818182	1.035443	0.250000	0.499912	70.300123	10.602308
pos_thresh_25	0.295724	2.272727	1.637856	0.102273	0.570356	83.870576	8.082806
bin	0.347414	9.090909	1.251668	0.272727	0.449259	69.129412	7.288249
minmax	0.464737	4.545455	2.156380	0.102273	0.270848	83.099057	11.163179
topK_5	0.121334	0.000000	0.000000	0.034091	0.949964	94.726891	8.300231
topK_30	0.379601	3.409091	1.392433	0.125000	0.699911	83.914835	10.091600
sigmoid	0.511993	4.545455	2.153358	0.079545	0.011028	88.065612	11.295047
sigmoid_pos	0.517645	4.545455	2.122453	0.079545	0.004862	87.398976	9.626561
pos_thresh_75	0.112632	0.000000	0.000000	0.011364	0.805798	94.556810	6.493573

In [34]: `display_experiment_results(experiment_results_false["cnn14_logstft"]["lime_clean"])`

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.571876	19.318182	8.291065	0.329545	0.454352	64.427788	9.770401
topK_30_pos	0.545752	10.227273	4.974083	0.193182	0.692452	77.441519	10.115883
minmax_pos	0.528683	3.409091	1.162153	0.125000	0.632914	89.202784	10.485179
topK_5_pos	0.282679	2.272727	0.446200	0.068182	0.936471	88.882856	8.528274
pos_thresh_50	0.402962	1.136364	0.396439	0.079545	0.876820	89.419504	9.023198
topK_50	0.569587	18.181818	9.447117	0.272727	0.493305	70.011761	10.615364
pos_thresh_25	0.529402	3.409091	1.766459	0.136364	0.705919	81.873358	9.938019
bin	0.569395	25.000000	12.278881	0.488636	0.305734	48.791411	10.909807
minmax	0.548853	6.818182	4.038918	0.125000	0.267736	84.486198	11.148491
topK_5	0.282679	2.272727	0.446200	0.068182	0.936471	88.882856	8.528274
topK_30	0.545752	10.227273	4.974083	0.193182	0.692452	77.441519	10.115883
sigmoid	0.520885	4.545455	1.890153	0.079545	0.005856	86.907575	11.295183
sigmoid_pos	0.520906	4.545455	1.906799	0.090909	0.004478	86.964142	11.295207
pos_thresh_75	0.226106	1.136364	0.358961	0.056818	0.950215	92.804292	8.109034

```
In [35]: display_experiment_results(experiment_results_false["cnn14_logstft"]["shap_clean"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.572406	4.545455	1.713856	0.079545	0.471585	91.785030	9.999750
topK_30_pos	0.567148	1.136364	0.883552	0.034091	0.699991	96.320111	10.091335
minmax_pos	0.315426	1.136364	0.120598	0.011364	0.732705	94.697038	10.239613
topK_5_pos	0.333723	1.136364	0.136690	0.034091	0.949986	93.894961	8.299783
pos_thresh_50	0.034279	1.136364	0.254741	0.011364	0.997548	96.957944	4.916781
topK_50	0.573036	2.272727	1.713665	0.022727	0.499994	97.463520	10.602145
pos_thresh_25	0.267677	0.000000	0.000000	0.011364	0.964013	96.971944	7.836621
bin	0.572843	2.272727	1.710430	0.022727	0.489782	97.454102	10.622260
minmax	0.547897	3.409091	1.015477	0.068182	0.072308	92.218731	11.285838
topK_5	0.333723	1.136364	0.136690	0.034091	0.949986	93.894961	8.299783
topK_30	0.567148	1.136364	0.883552	0.034091	0.699991	96.320111	10.091335
sigmoid	0.513871	4.545455	2.193745	0.068182	0.000593	87.909972	11.295279
sigmoid_pos	0.514032	4.545455	2.192524	0.068182	0.000304	87.883667	11.295279
pos_thresh_75	0.001278	0.000000	0.000000	0.011364	0.998327	96.646713	2.188824

## Mask experiments clean - mel model

```
In [36]: display_experiment_results(mask_experiment_results["cnn14_logmel"]["clean"])
```

--- topK_50_pos ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.923509	17.000000	0.010820	0.660000	0.173750	34.228729	3.364614
gradcam	0.620931	11.750000	0.986515	0.652500	0.376861	38.971917	7.311441
lime	0.827086	13.500000	5.598555	0.750000	0.461311	30.218063	9.410670
shap	0.927128	0.000000	0.000000	0.017500	0.500000	98.489136	9.682342
--- topK_30_pos ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.924342	0.000000	0.000000	0.015000	0.700006	98.380550	9.171495
gradcam	0.362777	8.000000	0.610826	0.445000	0.594143	60.972215	7.798626
lime	0.623726	10.000000	4.870080	0.542500	0.674179	49.493281	9.251675
shap	0.920323	0.000000	0.000000	0.015000	0.700006	98.376693	9.171495
--- minmax_pos ---							



	FF	AI	AG	FidIn	SPS	AD	COMP
<b>saliency</b>	<b>0.924342</b>	<b>0.000000</b>	<b>0.000000</b>	<b>0.015000</b>	<b>0.700006</b>	<b>98.380550</b>	<b>9.171495</b>
<b>gradcam</b>	<b>0.273394</b>	2.250000	0.820703	0.352500	0.698777	71.267326	9.175542
<b>lime</b>	0.623726	<b>10.000000</b>	<b>4.870080</b>	<b>0.542500</b>	<b>0.674179</b>	<b>49.493281</b>	<b>9.251675</b>
<b>shap</b>	0.920323	<b>0.000000</b>	<b>0.000000</b>	<b>0.015000</b>	0.700006	98.376693	9.171495

--- sigmoid ---

	FF	AI	AG	FidIn	SPS	AD	COMP
<b>saliency</b>	0.494250	<b>3.500000</b>	<b>1.586628</b>	<b>0.705000</b>	<b>0.000435</b>	<b>38.663598</b>	<b>10.375488</b>
<b>gradcam</b>	<b>0.503142</b>	2.000000	0.972570	0.677500	<b>0.026291</b>	41.579207	<b>10.373997</b>
<b>lime</b>	0.497470	2.000000	0.954793	0.677500	0.014309	42.379379	10.374871
<b>shap</b>	<b>0.411541</b>	<b>1.750000</b>	<b>0.706020</b>	<b>0.635000</b>	0.001600	<b>45.859315</b>	10.375483

--- sigmoid\_pos ---

	FF	AI	AG	FidIn	SPS	AD	COMP
<b>saliency</b>	0.459911	2.500000	1.171660	<b>0.677500</b>	<b>0.000218</b>	41.395925	<b>10.375489</b>
<b>gradcam</b>	<b>0.509011</b>	<b>2.750000</b>	<b>1.287992</b>	0.672500	<b>0.021327</b>	<b>41.113377</b>	<b>9.803656</b>
<b>lime</b>	0.496602	<b>2.000000</b>	0.963045	0.675000	0.013037	42.468471	10.374927
<b>shap</b>	<b>0.413540</b>	<b>2.000000</b>	<b>0.717767</b>	<b>0.632500</b>	0.000816	<b>45.765673</b>	10.375487

--- pos\_thresh\_75 ---

	FF	AI	AG	FidIn	SPS	AD	COMP
<b>saliency</b>	0.004156	<b>0.000000</b>	<b>0.000000</b>	0.030000	0.998694	97.389923	<b>1.330769</b>
<b>gradcam</b>	0.158799	0.250000	0.219627	0.220000	<b>0.782398</b>	83.862255	7.872705
<b>lime</b>	<b>0.238406</b>	<b>3.250000</b>	<b>1.655848</b>	<b>0.350000</b>	0.861821	<b>68.189178</b>	<b>8.186731</b>
<b>shap</b>	<b>0.000941</b>	<b>0.000000</b>	<b>0.000000</b>	<b>0.027500</b>	<b>0.998980</b>	<b>97.767977</b>	1.983555

## Mask experiments - stft model

```
In [37]: display_experiment_results(mask_experiment_results["cnn14_logstft"]["clean"])
```

--- topK\_50\_pos ---

	FF	AI	AG	FidIn	SPS	AD	COMP
<b>saliency</b>	<b>0.804243</b>	21.250000	<b>0.005357</b>	0.515000	0.246247	48.376074	5.221556
<b>gradcam</b>	<b>0.724579</b>	<b>24.750000</b>	0.217910	<b>0.702500</b>	<b>0.224974</b>	<b>31.075000</b>	<b>4.771012</b>
<b>lime</b>	0.765314	16.750000	<b>8.681377</b>	0.452500	<b>0.472411</b>	55.331106	<b>10.164076</b>
<b>shap</b>	0.802137	<b>3.750000</b>	0.377866	<b>0.117500</b>	0.448744	<b>88.001432</b>	9.515425

--- topK\_30\_pos ---

	FF	AI	AG	FidIn	SPS	AD	COMP
<b>saliency</b>	<b>0.775971</b>	1.000000	0.695137	0.030000	<b>0.699991</b>	96.617813	10.091335
<b>gradcam</b>	<b>0.572529</b>	<b>16.250000</b>	<b>0.219069</b>	<b>0.517500</b>	<b>0.442721</b>	<b>50.726126</b>	<b>6.382848</b>
<b>lime</b>	0.694155	10.000000	<b>5.252163</b>	0.337500	0.691593	67.192280	<b>10.118696</b>
<b>shap</b>	0.763906	<b>0.500000</b>	0.387102	<b>0.027500</b>	<b>0.699991</b>	<b>97.378508</b>	10.091335

--- minmax\_pos ---

	FF	AI	AG	FidIn	SPS	AD	COMP
<b>saliency</b>	<b>0.793905</b>	<b>1.250000</b>	0.374701	0.045000	<b>0.783134</b>	94.492255	9.997833
<b>gradcam</b>	<b>0.320230</b>	0.500000	0.087757	0.100000	<b>0.610100</b>	90.744003	<b>9.346533</b>
<b>lime</b>	0.633585	1.000000	<b>0.381902</b>	<b>0.180000</b>	0.621340	<b>84.303404</b>	<b>10.527688</b>
<b>shap</b>	0.455331	<b>0.250000</b>	<b>0.026532</b>	<b>0.020000</b>	0.733023	<b>96.696681</b>	10.238195

--- topK\_5\_pos ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.617889	0.750000	0.579243	0.030000	0.949986	96.632662	8.299783
gradcam	0.191031	6.250000	0.071148	0.157500	0.835978	84.384347	7.304013
lime	0.250140	0.750000	0.135246	0.135000	0.936524	89.718892	8.527748
shap	0.444995	0.250000	0.030072	0.017500	0.949986	96.534742	8.299783
--- pos_thresh_50 ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.031167	0.500000	0.253879	0.030000	0.999009	96.453913	3.677172
gradcam	0.266586	0.250000	0.207937	0.117500	0.762384	89.263126	8.492369
lime	0.431767	0.750000	0.356323	0.182500	0.868335	84.286786	9.100906
shap	0.042832	0.750000	0.169498	0.010000	0.997583	97.548774	4.935396
--- topK_50 ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.791540	0.500000	0.431110	0.027500	0.499994	96.391078	10.602145
gradcam	0.585838	4.000000	1.152864	0.437500	0.499938	59.861858	10.602257
lime	0.764448	15.500000	9.093660	0.427500	0.493322	57.746470	10.615335
shap	0.797198	0.500000	0.377006	0.020000	0.499994	97.530510	10.602145
--- pos_thresh_25 ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.219041	1.250000	0.177886	0.040000	0.991120	95.720335	6.327378
gradcam	0.398511	2.250000	0.973528	0.267500	0.600928	73.924376	9.142811
lime	0.676561	5.750000	2.650058	0.335000	0.697021	68.592485	9.986101
shap	0.325835	0.000000	0.000000	0.020000	0.963614	97.014994	7.850671
--- bin ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.791281	0.500000	0.430915	0.027500	0.500274	96.420557	10.601551
gradcam	0.474595	7.500000	1.070762	0.497500	0.451437	54.120088	8.475080
lime	0.790285	26.000000	14.205455	0.685000	0.272667	32.028679	10.931619
shap	0.796341	0.500000	0.376295	0.020000	0.491457	97.488113	10.618963
--- minmax ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.788165	10.000000	6.286535	0.342500	0.038138	66.196693	11.292008
gradcam	0.567456	1.750000	0.520995	0.262500	0.295466	75.694391	11.139094
lime	0.685044	3.000000	1.561553	0.237500	0.311617	77.522342	11.105058
shap	0.758164	1.250000	0.592583	0.085000	0.072735	92.499200	11.285742
--- topK_5 ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.617889	0.750000	0.579243	0.030000	0.949986	96.632662	8.299783
gradcam	0.114764	0.250000	0.070154	0.040000	0.949974	95.877295	8.300039
lime	0.250140	0.750000	0.135246	0.135000	0.936524	89.718892	8.527748
shap	0.444995	0.250000	0.030072	0.017500	0.949986	96.534742	8.299783
--- topK_30 ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.775971	1.000000	0.695137	0.030000	0.699991	96.617813	10.091335
gradcam	0.425481	1.500000	0.694756	0.272500	0.699953	76.859205	10.091461
lime	0.694155	10.000000	5.252163	0.337500	0.691593	67.192280	10.118696
shap	0.763906	0.500000	0.387102	0.027500	0.699991	97.378508	10.091335
--- sigmoid ---							

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.643469	2.500000	0.838001	0.202500	0.000142	79.326670	11.295279
gradcam	0.634957	1.750000	0.747174	0.190000	0.014194	80.017202	11.294890
lime	0.647775	2.500000	0.875570	0.217500	0.007533	78.297433	11.295110
shap	0.638561	2.000000	0.676899	0.190000	0.000569	79.908981	11.295279
--- sigmoid_pos ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.641400	2.000000	0.750599	0.197500	0.000071	79.565167	11.295279
gradcam	0.645253	2.250000	0.778206	0.205000	0.007431	79.146000	10.504438
lime	0.648529	2.500000	0.878564	0.222500	0.006348	78.271001	11.295134
shap	0.638853	2.000000	0.679504	0.192500	0.000291	79.869016	11.295279
--- pos_thresh_75 ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.006663	0.000000	0.000000	0.010000	0.997741	97.268040	1.625156
gradcam	0.101793	0.000000	0.000000	0.050000	0.879805	95.176441	7.329255
lime	0.213145	0.250000	0.078971	0.122500	0.943129	90.821143	8.265318
shap	0.000926	0.250000	0.015382	0.012500	0.998292	97.660085	2.156133

## Noisy experiments - mel model

```
In [38]: display_experiment_results(experiment_results["cnn14_logmel"]["saliency_white"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.711190	32.500000	0.009746	0.745000	0.127500	25.342996	2.468997
topK_30_pos	0.713284	0.500000	0.175175	0.022500	0.700006	97.727077	9.171495
minmax_pos	0.692917	0.500000	0.219268	0.100000	0.783581	92.279278	9.085023
topK_5_pos	0.684098	0.000000	0.000000	0.007500	0.949973	98.185153	7.380256
pos_thresh_50	0.124662	0.500000	0.232667	0.030000	0.998953	96.182471	2.896074
topK_50	0.712000	0.500000	0.149811	0.022500	0.500000	97.723036	9.682342
pos_thresh_25	0.401284	0.500000	0.384639	0.017500	0.992539	97.143905	5.222684
bin	0.711829	0.500000	0.155864	0.022500	0.502705	97.702287	9.676883
minmax	0.696012	4.750000	3.127126	0.102500	0.035328	89.096607	10.372436
topK_5	0.684098	0.000000	0.000000	0.007500	0.949973	98.185153	7.380256
topK_30	0.713284	0.500000	0.175175	0.022500	0.700006	97.727077	9.171495
sigmoid	0.551320	8.500000	4.458095	0.475000	0.000461	59.530889	10.375488
sigmoid_pos	0.522607	7.750000	3.453662	0.437500	0.000231	62.839514	10.375489
pos_thresh_75	0.036817	0.000000	0.000000	0.037500	0.998527	96.274690	1.169532

```
In [39]: display_experiment_results(experiment_results["cnn14_logmel"]["saliency_room"])
```



	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.850689	27.250000	0.010742	0.685000	0.157500	31.044639	3.049938
topK_30_pos	0.850516	0.000000	0.000000	0.012500	0.700006	98.061626	9.171495
minmax_pos	0.792496	0.500000	0.211552	0.082500	0.776968	94.060062	9.124363
topK_5_pos	0.766804	0.000000	0.000000	0.020000	0.949973	97.426624	7.380256
pos_thresh_50	0.084152	0.500000	0.212758	0.017500	0.998847	97.245856	3.084981
topK_50	0.850997	0.000000	0.000000	0.012500	0.500000	98.094113	9.682342
pos_thresh_25	0.387530	0.750000	0.328547	0.025000	0.990762	96.975251	5.462471
bin	0.851018	0.000000	0.000000	0.012500	0.501807	98.102482	9.678695
minmax	0.824637	3.250000	2.295471	0.117500	0.038908	88.139321	10.371981
topK_5	0.766804	0.000000	0.000000	0.020000	0.949973	97.426624	7.380256
topK_30	0.850516	0.000000	0.000000	0.012500	0.700006	98.061626	9.171495
sigmoid	0.596879	6.000000	3.488200	0.572500	0.000517	51.145902	10.375488
sigmoid_pos	0.560616	4.750000	2.694025	0.545000	0.000259	54.838752	10.375489
pos_thresh_75	0.023657	0.000000	0.000000	0.025000	0.998631	97.021990	1.284587

```
In [40]: display_experiment_results(experiment_results["cnn14_logmel"]["saliency_horse"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.790323	19.250000	0.007534	0.490000	0.256250	49.701692	4.962200
topK_30_pos	0.788420	0.000000	0.000000	0.002500	0.700006	97.230655	9.171495
minmax_pos	0.769024	0.250000	0.228765	0.067500	0.774734	92.016089	9.143446
topK_5_pos	0.695200	0.500000	0.155136	0.012500	0.949973	95.898839	7.380256
pos_thresh_50	0.107027	0.500000	0.203184	0.010000	0.998757	97.487749	3.272373
topK_50	0.789539	0.000000	0.000000	0.002500	0.500000	96.983300	9.682342
pos_thresh_25	0.386120	1.000000	0.463934	0.007500	0.989099	97.536813	5.682875
bin	0.789483	0.000000	0.000000	0.002500	0.499990	96.975555	9.682347
minmax	0.774518	10.750000	7.401402	0.277500	0.040483	72.553143	10.371809
topK_5	0.695200	0.500000	0.155136	0.012500	0.949973	95.898839	7.380256
topK_30	0.788420	0.000000	0.000000	0.002500	0.700006	97.230655	9.171495
sigmoid	0.611014	3.500000	1.996095	0.555000	0.000539	56.130944	10.375488
sigmoid_pos	0.575920	3.000000	1.416806	0.512500	0.000269	61.363719	10.375489
pos_thresh_75	0.021554	0.000000	0.000000	0.012500	0.998796	96.980906	1.429625

```
In [41]: display_experiment_results(experiment_results["cnn14_logmel"]["gradcam_white"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.614212	22.750000	0.895524	0.607500	0.279518	41.201800	5.423072
topK_30_pos	0.507756	17.750000	0.732232	0.435000	0.470052	56.851181	6.170159
minmax_pos	0.410126	1.750000	0.942711	0.162500	0.455897	86.231142	8.169024
topK_5_pos	0.216792	9.750000	0.001232	0.220000	0.785244	78.910743	6.123868
pos_thresh_50	0.367672	6.000000	1.895025	0.245000	0.578542	77.531645	7.416078
topK_50	0.552914	5.500000	2.520131	0.292500	0.499065	72.616278	9.684207
pos_thresh_25	0.469095	9.500000	2.522458	0.367500	0.425811	64.546311	6.748737
bin	0.526246	15.750000	2.547937	0.510000	0.291736	49.573783	5.396175
minmax	0.545293	1.750000	1.096807	0.205000	0.346065	81.683006	10.148230
topK_5	0.134890	0.250000	0.061107	0.070000	0.948927	94.279909	7.400621
topK_30	0.424646	2.500000	1.210096	0.157500	0.698876	83.873959	9.175246
sigmoid	0.514549	5.250000	1.910096	0.372500	0.021900	67.793831	10.374392
sigmoid_pos	0.523618	5.500000	2.506272	0.380000	0.014240	66.116355	8.922229
pos_thresh_75	0.221480	0.500000	0.139204	0.102500	0.744058	91.551230	6.855847

```
In [42]: display_experiment_results(experiment_results["cnn14_logmel"] ["gradcam_room"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.668329	15.500000	1.049485	0.617500	0.328206	42.246285	6.367224
topK_30_pos	0.487269	10.000000	0.239408	0.420000	0.531187	61.041883	6.973047
minmax_pos	0.423070	0.500000	0.199785	0.227500	0.443758	82.149382	8.831108
topK_5_pos	0.146072	4.500000	0.001316	0.157500	0.846876	85.622335	6.605853
pos_thresh_50	0.360350	2.750000	0.839456	0.307500	0.578900	74.603804	8.099933
topK_50	0.595938	4.500000	2.336654	0.417500	0.499191	62.563061	9.683955
pos_thresh_25	0.527204	10.500000	3.708322	0.525000	0.398001	52.277242	7.448694
bin	0.624585	16.750000	2.458265	0.645000	0.262752	37.184366	5.513788
minmax	0.553362	1.250000	0.568341	0.272500	0.331609	76.072015	10.168424
topK_5	0.077781	0.000000	0.000000	0.062500	0.948867	95.579716	7.401766
topK_30	0.383433	1.750000	0.702444	0.255000	0.698868	78.844232	9.175269
sigmoid	0.558418	3.000000	1.595462	0.535000	0.023324	57.186894	10.374343
sigmoid_pos	0.565542	3.500000	1.996931	0.542500	0.016902	56.205008	9.492769
pos_thresh_75	0.182597	0.000000	0.000000	0.135000	0.779157	89.195469	7.443469

```
In [43]: display_experiment_results(experiment_results["cnn14_logmel"] ["gradcam_horse"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.668687	16.750000	0.851790	0.522500	0.343045	50.511042	6.658016
topK_30_pos	0.456246	8.750000	0.002277	0.285000	0.576740	73.302948	7.569022
minmax_pos	0.503738	0.750000	0.092385	0.147500	0.489186	88.137892	9.195824
topK_5_pos	0.118517	3.750000	0.000537	0.100000	0.884974	90.037609	6.899170
pos_thresh_50	0.449253	2.000000	0.546866	0.235000	0.606197	80.000784	8.682833
topK_50	0.612718	3.750000	1.824735	0.307500	0.499043	71.618280	9.684251
pos_thresh_25	0.575466	7.750000	1.807158	0.435000	0.437871	59.357193	8.634937
bin	0.646846	13.750000	2.481985	0.595000	0.311681	42.425838	6.834141
minmax	0.665791	2.250000	0.614114	0.255000	0.302349	78.446919	10.195314
topK_5	0.093737	0.250000	0.023225	0.037500	0.948990	96.102285	7.399404
topK_30	0.393378	0.500000	0.110620	0.142500	0.699018	87.259372	9.174775
sigmoid	0.586694	1.000000	0.272882	0.445000	0.045033	66.063212	10.371287
sigmoid_pos	0.594669	2.250000	0.595393	0.470000	0.024390	63.589368	9.907195
pos_thresh_75	0.251565	0.500000	0.216440	0.075000	0.799444	92.968666	7.877564

```
In [44]: display_experiment_results(experiment_results["cnn14_logmel"] ["lime_white"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.661303	15.500000	5.588439	0.500000	0.436843	50.420955	9.111431
topK_30_pos	0.579218	10.250000	4.118558	0.360000	0.652824	64.583169	9.145879
minmax_pos	0.640144	5.500000	2.944553	0.292500	0.518474	72.856361	9.778440
topK_5_pos	0.287504	2.500000	0.941906	0.165000	0.905188	83.750265	7.976897
pos_thresh_50	0.543765	8.250000	4.268772	0.325000	0.710520	67.540012	8.939172
topK_50	0.662237	13.750000	6.133981	0.472500	0.466945	53.109298	9.745318
pos_thresh_25	0.655523	17.500000	8.751906	0.555000	0.506051	44.673501	9.432342
bin	0.698812	34.250000	9.174560	0.802500	0.187839	19.663277	8.035213
minmax	0.650651	7.500000	3.858202	0.312500	0.404169	70.803854	10.041012
topK_5	0.287504	2.500000	0.941906	0.165000	0.905188	83.750265	7.976897
topK_30	0.579632	9.750000	4.343810	0.355000	0.662899	65.145292	9.284801
sigmoid	0.557132	8.000000	3.849045	0.400000	0.015988	65.894752	10.374765
sigmoid_pos	0.555828	7.750000	3.768415	0.397500	0.014469	65.821766	10.374838
pos_thresh_75	0.408778	5.250000	2.258611	0.232500	0.833223	77.525128	8.406193

In [45]: display\_experiment\_results(experiment\_results["cnn14\_logmel"]["lime\_room"])

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.798876	11.000000	3.884707	0.525000	0.465679	49.757447	9.482351
topK_30_pos	0.676907	6.000000	2.684843	0.387500	0.673884	64.779027	9.252643
minmax_pos	0.756607	2.000000	0.992042	0.267500	0.571788	78.139046	9.702122
topK_5_pos	0.266320	2.000000	1.103010	0.170000	0.917428	84.912728	7.843242
pos_thresh_50	0.545555	5.000000	2.517660	0.302500	0.779319	73.168008	8.676935
topK_50	0.799205	9.750000	4.356550	0.515000	0.477792	50.985642	9.725162
pos_thresh_25	0.765974	10.750000	4.329350	0.495000	0.599181	53.205151	9.282798
bin	0.834633	22.750000	10.066187	0.822500	0.209662	21.224098	9.733605
minmax	0.772891	2.500000	0.969162	0.275000	0.402839	75.501471	10.055631
topK_5	0.266320	2.000000	1.103010	0.170000	0.917428	84.912728	7.843242
topK_30	0.676907	6.000000	2.684843	0.387500	0.673884	64.779027	9.252643
sigmoid	0.598701	3.250000	1.934571	0.502500	0.015792	56.989645	10.374776
sigmoid_pos	0.596822	3.250000	1.912979	0.505000	0.014285	57.145403	10.374840
pos_thresh_75	0.331308	2.250000	1.468846	0.195000	0.880057	81.639244	8.071825

In [46]: display\_experiment\_results(experiment\_results["cnn14\_logmel"]["lime\_horse"])

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.764370	19.750000	9.932483	0.655000	0.439142	38.065049	8.974500
topK_30_pos	0.662887	14.750000	8.590946	0.405000	0.672999	59.581706	9.227538
minmax_pos	0.699502	6.750000	4.104590	0.262500	0.604543	75.048172	9.633056
topK_5_pos	0.273862	4.500000	2.608519	0.205000	0.916421	82.605794	7.849365
pos_thresh_50	0.527689	10.250000	6.915780	0.317500	0.789854	70.807660	8.659089
topK_50	0.760747	21.750000	12.180873	0.640000	0.476016	39.704406	9.728505
pos_thresh_25	0.703865	15.500000	10.398968	0.512500	0.627666	50.686515	9.279216
bin	0.780193	40.000000	20.360500	0.827500	0.291061	16.939316	9.829493
minmax	0.730194	10.250000	6.102790	0.382500	0.368780	65.278803	10.106139
topK_5	0.273862	4.500000	2.608519	0.205000	0.916421	82.605794	7.849365
topK_30	0.662933	14.500000	8.590932	0.402500	0.674724	59.821911	9.250549
sigmoid	0.600107	4.000000	1.709758	0.497500	0.018723	61.679100	10.374649
sigmoid_pos	0.599394	2.750000	1.428018	0.480000	0.015101	62.498017	10.374842
pos_thresh_75	0.337981	5.250000	3.795244	0.232500	0.889431	80.521404	8.004952

```
In [47]: display_experiment_results(experiment_results["cnn14_logme1"]["shap_white"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.711890	0.750000	0.244811	0.022500	0.500000	97.825080	9.682342
topK_30_pos	0.712049	0.750000	0.239593	0.022500	0.700006	97.841733	9.171495
minmax_pos	0.703279	0.250000	0.133590	0.012500	0.721409	97.694101	9.358230
topK_5_pos	0.697979	0.250000	0.142631	0.010000	0.949973	97.190329	7.380256
pos_thresh_50	0.153013	1.000000	0.414723	0.037500	0.996068	96.786666	4.462922
topK_50	0.711890	0.750000	0.244811	0.022500	0.500000	97.825080	9.682342
pos_thresh_25	0.672607	0.000000	0.000000	0.007500	0.949855	97.280186	7.272439
bin	0.711994	0.750000	0.248285	0.022500	0.488620	97.833374	9.704824
minmax	0.707674	0.000000	0.000000	0.017500	0.081260	97.210558	10.363955
topK_5	0.697979	0.250000	0.142631	0.010000	0.949973	97.190329	7.380256
topK_30	0.712049	0.750000	0.239593	0.022500	0.700006	97.841733	9.171495
sigmoid	0.479692	5.000000	1.995513	0.380000	0.001059	69.050048	10.375487
sigmoid_pos	0.479328	5.000000	1.980919	0.382500	0.000543	68.713899	10.375488
pos_thresh_75	0.014333	0.000000	0.000000	0.035000	0.998922	96.935569	1.893806

```
In [48]: display_experiment_results(experiment_results["cnn14_logme1"]["shap_room"])
```

	FF	AI	AG	FidIn	SPS	AD	COMP
topK_50_pos	0.851707	0.000000	0.000000	0.012500	0.500000	98.118999	9.682342
topK_30_pos	0.848558	0.000000	0.000000	0.012500	0.700006	98.169867	9.171495
minmax_pos	0.827403	0.000000	0.000000	0.015000	0.721625	98.417283	9.356942
topK_5_pos	0.824963	0.000000	0.000000	0.020000	0.949973	97.573005	7.380256
pos_thresh_50	0.094349	0.000000	0.000000	0.015000	0.996874	97.482737	4.248237
topK_50	0.851707	0.000000	0.000000	0.012500	0.500000	98.118999	9.682342
pos_thresh_25	0.736986	0.000000	0.000000	0.002500	0.957153	98.339161	7.097326
bin	0.851762	0.000000	0.000000	0.012500	0.486988	98.107902	9.707996
minmax	0.844402	0.000000	0.000000	0.032500	0.066837	97.179150	10.367339
topK_5	0.824963	0.000000	0.000000	0.020000	0.949973	97.573005	7.380256
topK_30	0.848558	0.000000	0.000000	0.012500	0.700006	98.169867	9.171495
sigmoid	0.506164	3.000000	1.742738	0.487500	0.001007	61.328933	10.375487
sigmoid_pos	0.507642	3.250000	1.760654	0.487500	0.000519	61.117844	10.375488
pos_thresh_75	0.002502	0.000000	0.000000	0.017500	0.998952	97.195290	1.867501

```
In [49]: display_experiment_results(experiment_results["cnn14_logme1"]["shap_horse"])
```





	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.036817	0.000000	0.000000	0.037500	0.998527	96.274690	1.169532
gradcam	0.221480	0.500000	0.139204	0.102500	0.744058	91.551230	6.855847
lime	0.408778	5.250000	2.258611	0.232500	0.833223	77.525128	8.406193
shap	0.014333	0.000000	0.000000	0.035000	0.998922	96.935569	1.893806

```
In [51]: display_experiment_results(mask_experiment_results["cnn14_logme1"] ["room"])
```

```
--- topK_50_pos ---
```

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.850689	27.250000	0.010742	0.685000	0.157500	31.044639	3.049938
gradcam	0.668329	15.500000	1.049485	0.617500	0.328206	42.246285	6.367224
lime	0.798876	11.000000	3.884707	0.525000	0.465679	49.757447	9.482351
shap	0.851707	0.000000	0.000000	0.012500	0.500000	98.118999	9.682342

```
--- topK_30_pos ---
```

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.850516	0.000000	0.000000	0.012500	0.700006	98.061626	9.171495
gradcam	0.487269	10.000000	0.239408	0.420000	0.531187	61.041883	6.973047
lime	0.676907	6.000000	2.684843	0.387500	0.673884	64.779027	9.252643
shap	0.848558	0.000000	0.000000	0.012500	0.700006	98.169867	9.171495

```
--- minmax_pos ---
```

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.792496	0.500000	0.211552	0.082500	0.776968	94.060062	9.124363
gradcam	0.423070	0.500000	0.199785	0.227500	0.443758	82.149382	8.831108
lime	0.756607	2.000000	0.992042	0.267500	0.571788	78.139046	9.702122
shap	0.827403	0.000000	0.000000	0.015000	0.721625	98.417283	9.356942

```
--- topK_5_pos ---
```

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.766804	0.000000	0.000000	0.020000	0.949973	97.426624	7.380256
gradcam	0.146072	4.500000	0.001316	0.157500	0.846876	85.622335	6.605853
lime	0.266320	2.000000	1.103010	0.170000	0.917428	84.912728	7.843242
shap	0.824963	0.000000	0.000000	0.020000	0.949973	97.573005	7.380256

```
--- pos_thresh_50 ---
```

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.084152	0.500000	0.212758	0.017500	0.998847	97.245856	3.084981
gradcam	0.360350	2.750000	0.839456	0.307500	0.578900	74.603804	8.099933
lime	0.545555	5.000000	2.517660	0.302500	0.779319	73.168008	8.676935
shap	0.094349	0.000000	0.000000	0.015000	0.996874	97.482737	4.248237

```
--- topK_50 ---
```

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.850997	0.000000	0.000000	0.012500	0.500000	98.094113	9.682342
gradcam	0.595938	4.500000	2.336654	0.417500	0.499191	62.563061	9.683955
lime	0.799205	9.750000	4.356550	0.515000	0.477792	50.985642	9.725162
shap	0.851707	0.000000	0.000000	0.012500	0.500000	98.118999	9.682342

```
--- pos_thresh_25 ---
```

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.387530	0.750000	0.328547	0.025000	0.990762	96.975251	5.462471
gradcam	0.527204	10.500000	3.708322	0.525000	0.398001	52.277242	7.448694
lime	0.765974	10.750000	4.329350	0.495000	0.599181	53.205151	9.282798
shap	0.736986	0.000000	0.000000	0.002500	0.957153	98.339161	7.097326

```
--- bin ---
```

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.851018	0.000000	0.000000	0.012500	0.501807	98.102482	9.678695
gradcam	0.624585	16.750000	2.458265	0.645000	0.262752	37.184366	5.513788
lime	0.834633	22.750000	10.066187	0.822500	0.209662	21.224098	9.733605
shap	0.851762	0.000000	0.000000	0.012500	0.486988	98.107902	9.707996

--- minmax ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.824637	3.250000	2.295471	0.117500	0.038908	88.139321	10.371981
gradcam	0.553362	1.250000	0.568341	0.272500	0.331609	76.072015	10.168424
lime	0.772891	2.500000	0.969162	0.275000	0.402839	75.501471	10.055631
shap	0.844402	0.000000	0.000000	0.032500	0.066837	97.179150	10.367339

--- topK\_5 ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.766804	0.000000	0.000000	0.020000	0.949973	97.426624	7.380256
gradcam	0.077781	0.000000	0.000000	0.062500	0.948867	95.579716	7.401766
lime	0.266320	2.000000	1.103010	0.170000	0.917428	84.912728	7.843242
shap	0.824963	0.000000	0.000000	0.020000	0.949973	97.573005	7.380256

--- topK\_30 ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.850516	0.000000	0.000000	0.012500	0.700006	98.061626	9.171495
gradcam	0.383433	1.750000	0.702444	0.255000	0.698868	78.844232	9.175269
lime	0.676907	6.000000	2.684843	0.387500	0.673884	64.779027	9.252643
shap	0.848558	0.000000	0.000000	0.012500	0.700006	98.169867	9.171495

--- sigmoid ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.596879	6.000000	3.488200	0.572500	0.000517	51.145902	10.375488
gradcam	0.558418	3.000000	1.595462	0.535000	0.023324	57.186894	10.374343
lime	0.598701	3.250000	1.934571	0.502500	0.015792	56.989645	10.374776
shap	0.506164	3.000000	1.742738	0.487500	0.001007	61.328933	10.375487

--- sigmoid\_pos ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.560616	4.750000	2.694025	0.545000	0.000259	54.838752	10.375489
gradcam	0.565542	3.500000	1.996931	0.542500	0.016902	56.205008	9.492769
lime	0.596822	3.250000	1.912979	0.505000	0.014285	57.145403	10.374840
shap	0.507642	3.250000	1.760654	0.487500	0.000519	61.117844	10.375488

--- pos\_thresh\_75 ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.023657	0.000000	0.000000	0.025000	0.998631	97.021990	1.284587
gradcam	0.182597	0.000000	0.000000	0.135000	0.779157	89.195469	7.443469
lime	0.331308	2.250000	1.468846	0.195000	0.880057	81.639244	8.071825
shap	0.002502	0.000000	0.000000	0.017500	0.998952	97.195290	1.867501

```
In [52]: display_experiment_results(mask_experiment_results["cnn14_logmel"] ["horse"])
```

--- topK\_50\_pos ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.790323	19.250000	0.007534	0.490000	0.256250	49.701692	4.962200
gradcam	0.668687	16.750000	0.851790	0.522500	0.343045	50.511042	6.658016
lime	0.764370	19.750000	9.932483	0.655000	0.439142	38.065049	8.974500
shap	0.790697	0.250000	0.000001	0.005000	0.498750	96.701207	9.658136

--- topK\_30\_pos ---



	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.788420	0.000000	0.000000	0.002500	0.700006	97.230655	9.171495
gradcam	0.456246	8.750000	0.002277	0.285000	0.576740	73.302948	7.569022
lime	0.662887	14.750000	8.590946	0.405000	0.672999	59.581706	9.227538
shap	0.783312	0.000000	0.000000	0.005000	0.700006	97.136149	9.171495

--- minmax\_pos ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.769024	0.250000	0.228765	0.067500	0.774734	92.016089	9.143446
gradcam	0.503738	0.750000	0.092385	0.147500	0.489186	88.137892	9.195824
lime	0.699502	6.750000	4.104590	0.262500	0.604543	75.048172	9.633056
shap	0.753468	0.000000	0.000000	0.007500	0.727941	97.820285	9.333287

--- topK\_5\_pos ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.695200	0.500000	0.155136	0.012500	0.949973	95.898839	7.380256
gradcam	0.118517	3.750000	0.000537	0.100000	0.884974	90.037609	6.899170
lime	0.273862	4.500000	2.608519	0.205000	0.916421	82.605794	7.849365
shap	0.731777	0.500000	0.035973	0.022500	0.949973	95.778591	7.380256

--- pos\_thresh\_50 ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.107027	0.500000	0.203184	0.010000	0.998757	97.487749	3.272373
gradcam	0.449253	2.000000	0.546866	0.235000	0.606197	80.000784	8.682833
lime	0.527689	10.250000	6.915780	0.317500	0.789854	70.807660	8.659089
shap	0.105702	0.500000	0.183802	0.017500	0.996972	97.933303	4.249547

--- topK\_50 ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.789539	0.000000	0.000000	0.002500	0.500000	96.983300	9.682342
gradcam	0.612718	3.750000	1.824735	0.307500	0.499043	71.618280	9.684251
lime	0.760747	21.750000	12.180873	0.640000	0.476016	39.704406	9.728505
shap	0.790343	0.000000	0.000000	0.002500	0.500000	96.830049	9.682342

--- pos\_thresh\_25 ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.386120	1.000000	0.463934	0.007500	0.989099	97.536813	5.682875
gradcam	0.575466	7.750000	1.807158	0.435000	0.437871	59.357193	8.634937
lime	0.703865	15.500000	10.398968	0.512500	0.627666	50.686515	9.279216
shap	0.566562	0.250000	0.056329	0.025000	0.961684	96.388800	6.980273

--- bin ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.789483	0.000000	0.000000	0.002500	0.499990	96.975555	9.682347
gradcam	0.646846	13.750000	2.481985	0.595000	0.311681	42.425838	6.834141
lime	0.780193	40.000000	20.360500	0.827500	0.291061	16.939316	9.829493
shap	0.790175	0.000000	0.000000	0.005000	0.488257	96.767103	9.705524

--- minmax ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.774518	10.750000	7.401402	0.277500	0.040483	72.553143	10.371809
gradcam	0.665791	2.250000	0.614114	0.255000	0.302349	78.446919	10.195314
lime	0.730194	10.250000	6.102790	0.382500	0.368780	65.278803	10.106139
shap	0.788614	0.500000	0.111171	0.017500	0.067695	97.039444	10.367169

--- topK\_5 ---

	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.695200	0.500000	0.155136	0.012500	0.949973	95.898839	7.380256
gradcam	0.093737	0.250000	0.023225	0.037500	0.948990	96.102285	7.399404
lime	0.273862	4.500000	2.608519	0.205000	0.916421	82.605794	7.849365
shap	0.731777	0.500000	0.035973	0.022500	0.949973	95.778591	7.380256
--- topK_30 ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.788420	0.000000	0.000000	0.002500	0.700006	97.230655	9.171495
gradcam	0.393378	0.500000	0.110620	0.142500	0.699018	87.259372	9.174775
lime	0.662933	14.500000	8.590932	0.402500	0.674724	59.821911	9.250549
shap	0.783312	0.000000	0.000000	0.005000	0.700006	97.136149	9.171495
--- sigmoid ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.611014	3.500000	1.996095	0.555000	0.000539	56.130944	10.375488
gradcam	0.586694	1.000000	0.272882	0.445000	0.045033	66.063212	10.371287
lime	0.600107	4.000000	1.709758	0.497500	0.018723	61.679100	10.374649
shap	0.524772	2.000000	0.652221	0.415000	0.001090	68.324628	10.375487
--- sigmoid_pos ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.575920	3.000000	1.416806	0.512500	0.000269	61.363719	10.375489
gradcam	0.594669	2.250000	0.595393	0.470000	0.024390	63.589368	9.907195
lime	0.599394	2.750000	1.428018	0.480000	0.015101	62.498017	10.374842
shap	0.526666	2.000000	0.657394	0.422500	0.000559	68.180132	10.375488
--- pos_thresh_75 ---							
	FF	AI	AG	FidIn	SPS	AD	COMP
saliency	0.021554	0.000000	0.000000	0.012500	0.998796	96.980906	1.429625
gradcam	0.251565	0.500000	0.216440	0.075000	0.799444	92.968666	7.877564
lime	0.337981	5.250000	3.795244	0.232500	0.889431	80.521404	8.004952
shap	0.003826	0.000000	0.000000	0.020000	0.998917	97.433498	1.839846

## Summary tables

```
In [53]: def _invert_metrics(df, invert_cols=("COMP", "AD")):
df = df.copy()
for c in invert_cols:
    if c in df.columns:
        df[c] = - df[c]
return df

def _metric_columns(df):
    return [c for c in df.columns if pd.api.types.is_numeric_dtype(df[c])]

def build_method_exp_index(experiment_results_dict):
    index = defaultdict(lambda: defaultdict(dict))
    for model, exps in experiment_results_dict.items():
        for exp_name, df in exps.items():
            if "_" in exp_name:
                method, exp = exp_name.split("_", 1)
            else:
                method, exp = exp_name, "exp"
            index[model][exp][method] = df
    return index

def summarize_best_masks_by_experiment(experiment_results_dict,
                                       invert_cols=("COMP", "AD"),
                                       known_methods=None):
    idx = build_method_exp_index(experiment_results_dict)
    summaries = defaultdict(dict)

    for model, exp_dict in idx.items():
        for exp, methods in exp_dict.items():
            rows = []
```

```

method_list = list(methods.keys())
if known_methods:

    method_list = [m for m in known_methods if m in methods]

for m in method_list:
    df = methods[m]

    metrics = _metric_columns(df)
    if not metrics:
        continue
    dfm = df[metrics].copy()
    dfm_inv = _invert_metrics(dfm, invert_cols=invert_cols)
    mean_score = dfm_inv.mean(axis=1)
    best_idx = mean_score.idxmax()
    out = {
        "method": m,
        "best_mask": best_idx,
        "mean_score": float(mean_score.loc[best_idx]),
    }

    for col in metrics:
        out[col] = float(dfm.loc[best_idx, col])
    rows.append(out)

out_df = pd.DataFrame(rows).sort_values("mean_score", ascending=False, ignore_index=True)
summaries[model][exp] = out_df
return summaries

_source = experiment_results

summaries_v2 = summarize_best_masks_by_experiment(
    _source,
    invert_cols=("COMP", "AD"),
    known_methods=method_names
)

for model, exps in summaries_v2.items():
    print(f"\n===== MODEL: {model} =====")
    for exp, df in exps.items():
        #print(f"\n--- Experiment: {exp} ---")
        #df = df[["method", "FF", "AI", "AG", "FidIn", "SPS", "AD", "COMP"]]
        #display(df)
        display_summary_table(df, title=f"--- Experiment: {exp} ---")

```

===== MODEL: cnn14\_logstft =====

=== --- Experiment: clean --- ===

	FF	AI	AG	FidIn	SPS	AD	COMP
<b>method</b>							
<b>saliency</b>	<b>0.804243</b>	21.250000	<b>0.005357</b>	0.515000	0.246247	48.376074	5.221556
<b>gradcam</b>	0.724579	24.750000	0.217910	<b>0.702500</b>	0.224974	<b>31.075000</b>	<b>4.771012</b>
<b>lime</b>	0.790285	<b>26.000000</b>	<b>14.205455</b>	0.685000	<b>0.272667</b>	32.028679	10.931619
<b>shap</b>	<b>0.638853</b>	<b>2.000000</b>	0.679504	<b>0.192500</b>	<b>0.000291</b>	<b>79.869016</b>	<b>11.295279</b>

===== MODEL: cnn14\_logmel =====

=== --- Experiment: clean --- ===

	FF	AI	AG	FidIn	SPS	AD	COMP
<b>method</b>							
<b>saliency</b>	<b>0.923509</b>	17.000000	<b>0.010820</b>	0.660000	0.173750	34.228729	<b>3.364614</b>
<b>gradcam</b>	0.718901	19.500000	2.312055	0.782500	0.195505	24.363625	4.918478
<b>lime</b>	0.899183	<b>28.750000</b>	<b>12.359402</b>	<b>0.932500</b>	<b>0.200351</b>	<b>8.067020</b>	9.534232
<b>shap</b>	<b>0.413540</b>	<b>2.000000</b>	0.717767	<b>0.632500</b>	<b>0.000816</b>	<b>45.765673</b>	<b>10.375487</b>

=== --- Experiment: white --- ===

	FF	AI	AG	FidIn	SPS	AD	COMP
<b>method</b>							
<b>saliency</b>	<b>0.711190</b>	32.500000	<b>0.009746</b>	0.745000	0.127500	25.342996	<b>2.468997</b>
<b>gradcam</b>	0.614212	22.750000	0.895524	0.607500	<b>0.279518</b>	41.201800	5.423072
<b>lime</b>	0.698812	<b>34.250000</b>	<b>9.174560</b>	<b>0.802500</b>	0.187839	<b>19.663277</b>	8.035213
<b>shap</b>	<b>0.479328</b>	<b>5.000000</b>	1.980919	<b>0.382500</b>	<b>0.000543</b>	<b>68.713899</b>	<b>10.375488</b>

=== --- Experiment: room --- ===

	FF	AI	AG	FidIn	SPS	AD	COMP
method							
saliency	0.850689	27.250000	0.010742	0.685000	0.157500	31.044639	3.049938
gradcam	0.624585	16.750000	2.458265	0.645000	0.262752	37.184366	5.513788
lime	0.834633	22.750000	10.066187	0.822500	0.209662	21.224098	9.733605
shap	0.507642	3.250000	1.760654	0.487500	0.000519	61.117844	10.375488

=== --- Experiment: horse --- ===

	FF	AI	AG	FidIn	SPS	AD	COMP
method							
saliency	0.790323	19.250000	0.007534	0.490000	0.256250	49.701692	4.962200
gradcam	0.646846	13.750000	2.481985	0.595000	0.311681	42.425838	6.834141
lime	0.780193	40.000000	20.360500	0.827500	0.291061	16.939316	9.829493
shap	0.526666	2.000000	0.657394	0.422500	0.000559	68.180132	10.375488

## Saving results

```
In [54]: os.makedirs("supplementary", exist_ok=True)
output_dir = os.path.join("supplementary", "exported_csvs")
os.makedirs(output_dir, exist_ok=True)

for model_type, exps in experiment_results.items():
    for exp_name, df in exps.items():
        fname = f"{model_type}_{exp_name}.csv"
        df.to_csv(os.path.join(output_dir, fname), index=True)

for model_type, exps in mask_experiment_results.items():
    for exp_type, masks in exps.items():
        for mask_name, df in masks.items():
            fname = f"{model_type}_{exp_type}_{mask_name}.csv"
            df.to_csv(os.path.join(output_dir, fname), index=True)

path_exported_true = os.path.join("supplementary", "exported_true")
path_exported_false = os.path.join("supplementary", "exported_false")
os.makedirs(path_exported_true, exist_ok=True)
os.makedirs(path_exported_false, exist_ok=True)

for model in model_types:
    for exp_name, df_t in experiment_results_true[model].items():
        df_t.to_csv(os.path.join(path_exported_true, f"{model}_{exp_name}_true.csv"), index=True)
    for exp_name, df_f in experiment_results_false[model].items():
        df_f.to_csv(os.path.join(path_exported_false, f"{model}_{exp_name}_false.csv"), index=True)
```