

Proofpoint Logo Detection & Classification

1st April 2021

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Corrections from Previous Presentation

	Correct Unknowns	Incorrect Unknowns	Accuracy Open Set
Unknown Class	84.4%	4.0%	94.5%
OLTR	88.9%	8.9%	90.7%
KNN (1st)	81.1%	50.9%	38.0%
KNN (2nd)	93.3%	9.4%	90.4%
KNN (1st + 2nd)	91.7%	9.4%	90.4%

Testing with Unknown Class

	Correct Unknowns	Incorrect Unknowns	Accuracy Open Set
KNN (1st)	81.1%	50.9%	38.0%
KNN (1st) With Unknown	76.1%	41.4%	43.1%
KNN (2nd)	93.3%	9.4%	90.4%
KNN (2nd) with Unknown	92.8%	6.2%	92.6%
KNN (1st + 2nd)	91.7%	9.4%	90.4%
KNN (1st + 2nd) with Unknown	92.8%	7.1%	92.6%

Adding New Classes

- Modified script to accept any number of additional classes.
- Adding changes to minimize calculation of activation vectors.
- Users can just add new classes to existing data sets.

Incorrect Unknowns with New Classes

Additional Classes	Trained Classes	New Classes	Trained Classes + Unknown	New Classes + Unknown
0	12 / 706	-	12 / 706	-
5	13 / 706	2 / 13	12 / 706	2 / 13
10	14 / 706	5 / 26	19 / 706	2 / 26
15	16 / 706	5 / 42	21 / 706	2 / 42

Incorrect Knowns with New Classes

Additional Classes	Trained Classes	New Classes	Trained Classes + Unknown	New Classes + Unknown
0	66 / 706	-	43	-
5	67 / 706	1 / 13	45	0
10	70 / 706	1 / 26	46	0
15	76 / 706	1 / 42	49	0

Next Steps

- Draft MIDS report (04/04)
- MIDS capstone symposium (04/09)
- Proofpoint Deliverables and the Final Presentation (04/22)

Appendix

Incorrect Unknowns with New Classes (Both)

Additional Classes	Trained Classes	New Classes
0	15 / 706	-
5	17 / 706	1 / 13
10	17 / 706	5 / 26
15	19 / 706	5 / 42

Incorrect Knowns with New Classes (Both)

Additional Classes	Trained Classes	New Classes
0	66	-
5	66	2
10	69	1
15	75	1