STARCRAFT																				Average Recall Across Attack
WB Random Attack	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.93244	0.06756	0.03569	0.96431		0.88548	0.11452	0.06809	0.93191		0.76541	0.23459	0.15941	0.84059			0.25171	0.74829		87.13
Binary LSTM	0.93412	0.06588	0.04158	0.95842		0.90832	0.09168	0.05840	0.94160		0.74719	0.25281	0.18799	0.81201			0.28558	0.71442		85.66
Random Forest	0.92226	0.07774	0.04568	0.95432		0.89596	0.10404	0.09459	0.90541		0.80094	0.19906	0.20242	0.79758			0.29765	0.70235		83.99
SVM Classifier	0.77701	0.22299	0.12922	0.87078		0.75519	0.24481	0.17248	0.82752		0.66506	0.33494	0.23345	0.76655			0.16642	0.83358		82.46
Knearest Neighbors	0.93350	0.06650	0.05506	0.94494		0.89964	0.10036	0.09782	0.90218		0.79623	0.20377	0.20527	0.79473			0.29842	0.70158		83.59
Ensemble			0.02240	0.97760	0.44030			0.03693	0.96307	0.64646			0.07384	0.92616	0.82122		0.09940	0.90060	1.00000	94.19
WB Strategic-Timed Atta	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.94614	0.05386	0.00846	0.99154		0.99921	0.00079	0.00051	0.99949		0.90966	0.09034	0.03989	0.96011			0.00153	0.99847		98.74
Binary LSTM	0.91125	0.08875	0.02397	0.97603		0.99935	0.00065	0.00033	0.99967		0.83655	0.16345	0.02241	0.97759			0.00177	0.99823		98.79
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble			0.01003	0.98997	0.51396			0.00003	0.99997	0.73236			0.00217	0.99783	0.91823		0.00016	0.99984	1.00000	99.69
Bbox prediction	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.92710	0.07290	0.05493	0.94507		0.98790	0.01210	0.02443	0.97557		0.98714	0.01286	0.02944	0.97056			0.06882	0.93118		95.56
Binary LSTM	0.89614	0.10386	0.03706	0.96294		0.98241	0.01759	0.01657	0.98343		0.98434	0.01566	0.02908	0.97092			0.07303	0.92697		96.11
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble			0.01743	0.98257	0.43224			0.00608	0.99392	0.65921			0.0084503	0.9915496	0.7817056		0.01609	0.98391	1.00000	98.80
Bbox random	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.98239	0.01761	0.03583	0.96417		0.99028	0.00972	0.02270	0.97730		0.98611	0.01389	0.02343	0.97657			0.02515	0.97485		97.32
Binary LSTM	0.97485	0.02515	0.02777	0.97223		0.98728	0.01272	0.01698	0.98302		0.98629	0.01371	0.01865	0.98135			0.03322	0.96678		97.58
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble			0.00946	0.99054	0.44304			0.00492	0.99508	0.56421			0.00312	0.99688	0.69092		0.00128	0.99872	1.00000	99.53
Bbox timed	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.92600	0.07400	0.00200	0.99800		0.99597	0.00403	0.00232	0.99768		0.98710	0.01290	0.01632	0.98368			0.07356	0.92644		97.65
Binary LSTM	0.93372	0.06628	0.00492	0.99508		0.99550	0.00450	0.00180	0.99820		0.98671	0.01329	0.01550	0.98450			0.07302	0.92698		97.62
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble			0.00061	0.99939	0.49309			0.00025	0.99975	0.69234			0.00764	0.99236	0.70672		0.02179	0.97821	1.00000	99.24
Whitebox Predict	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.87157	0.12843	0.02642	0.97358		0.97537	0.02463	0.01311	0.98689		0.98005	0.01995	0.02364	0.97636			0.07429	0.92571		96.56
Binary LSTM	0.89741	0.10259	0.04701	0.95299		0.98336	0.01664	0.02171	0.97829		0.98330	0.01670	0.03535	0.96465			0.06730	0.93270		95.72
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble			0.02423	0.97577	0.43523			0.00938	0.99062	0.66130			0.00989	0.99011	0.78173		0.01575	0.98425	0.86484	98.52

JOE'S ENVIRONMENT

WB Random Attack	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.93753	0.06247	0.06068	0.93932		0.97777	0.02223	0.02342	0.97658		0.98712	0.01288	0.01632	0.98368			0.02257	0.97743		96.92
Binary LSTM	0.92522	0.07478	0.06832	0.93168		0.97623	0.02377	0.02463	0.97537		0.98499	0.01501	0.01598	0.98402			0.03443	0.96557		96.42
Random Forest	0.88441	0.11559	0.10042	0.89958		0.96453	0.03547	0.03841	0.96159		0.98437	0.01563	0.02390	0.97610			0.02177	0.97823		95.39
SVM Classifier	0.70937	0.29063	0.30437	0.69563		0.84881	0.15119	0.17641	0.82359		0.91133	0.08867	0.10609	0.89391			0.08828	0.91172		83.12
Knearest Neighbors	0.68448	0.31552	0.32277	0.67723		0.79102	0.20898	0.22997	0.77003		0.83887	0.16113	0.20936	0.79064			0.23673	0.76327		75.03
Ensemble			0.04221	0.95779	0.60958			0.01455	0.98531	0.85804			0.00957	0.99043	0.94597		0.02025	0.97975	1.00000	97.84

WB Strategic-Timed Atta	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.98126	0.01874	0.03587	0.96413		0.97918	0.02082	0.03870	0.96130		0.96831	0.03169	0.03505	0.96495			0.03445	0.96555		96.40
Binary LSTM	0.97612	0.02388	0.02871	0.97129		0.97438	0.02562	0.03155	0.96845		0.96433	0.03567	0.02668	0.97332			0.01785	0.98215		97.38
Random Forest	0.98397	0.01603	0.08568	0.91432		0.97781	0.02219	0.08834	0.91166		0.95148	0.04852	0.06492	0.93508			0.03575	0.96425		93.13
SVM Classifier	0.96503	0.03497	0.23447	0.76553		0.94904	0.05096	0.20922	0.79078		0.89941	0.10059	0.15657	0.84343			0.09038	0.90962		82.73
Knearest Neighbors	0.90830	0.09170	0.20169	0.79831							0.84421	0.15579	0.17602	0.82398			0.13229	0.86771		87.25
Ensemble			0.01693	0.98307	0.63904			0.01820	0.98180	0.85570			0.01544	0.95370	0.99097		0.01021	0.98979	1.00000	98.48

Bbox prediction	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.82195	0.17805	0.06191	0.93809		0.90504	0.09496	0.07138	0.92862		0.95411	0.04589	0.06613	0.93387			0.05643	0.94357		93.60
Binary LSTM	0.84537	0.15463	0.11212	0.88788		0.90858	0.09142	0.10712	0.89288		0.95154	0.04846	0.08359	0.91641			0.06099	0.93901		90.90
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble			0.07799	0.92201	0.55288			0.07666	0.92334	0.82688			0.06083	0.93917	0.95071		0.04381	0.95619	1.00000	93.52

Bbox random	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.93287	0.06713	0.03291	0.96709		0.96343	0.03657	0.01947	0.98053		0.97198	0.02802	0.01589	0.98411			0.02592	0.97408		97.64
Binary LSTM	0.94200	0.05800	0.04782	0.95218		0.96902	0.03098	0.02573	0.97427		0.97869	0.02131	0.01972	0.98028			0.02347	0.97653		97.08
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble			0.02861	0.97139	0.61871			0.01569	0.98431	0.84578			0.01182	0.98818	0.94094		0.01348	0.98652	1.00000	98.26

Bbox timed	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.98573	0.01427	0.01755	0.98245		0.98182	0.01818	0.03169	0.96831		0.97475	0.02525	0.06752	0.93248			0.10125	0.89875		94.55
Binary LSTM	0.98847	0.01153	0.01564	0.98436		0.98593	0.01407	0.03078	0.96922		0.97933	0.02067	0.05971	0.94029			0.08025	0.91970		95.34
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble			0.00866	0.99134	0.62186			0.01642	0.98358	0.83620			0.03314	0.96686	0.94423		0.04472	0.95528	1.00000	97.43

Whitebox Predict	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.82278	0.17722	0.06123	0.93877		0.90563	0.09437	0.07155	0.92845		0.95442	0.04558	0.06678	0.93322			0.05620	0.94380		93.61
Binary LSTM	0.83763	0.16237	0.10879	0.89121		0.90158	0.09842	0.10536	0.89464		0.94686	0.05314	0.08263	0.91737			0.06103	0.93897		91.05
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble			0.07516	0.92484	0.5476312			0.07567	0.92433	0.82296			0.05992	0.94008	0.94956		0.04338	0.95662	1.00000	93.65

Frank's Env	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
WB Random	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.92493	0.07507	0.06226	0.93774		0.95005	0.04995	0.04377	0.95623		0.94257	0.05743	0.04292	0.95708			0.05456	0.94544		94.91
Binary LSTM	0.91917	0.08083	0.06729	0.93271		0.94892	0.05108	0.04263	0.95737		0.94769	0.05231	0.04769	0.95231			0.06785	0.93215		94.36
Random Forest	0.90606	0.09394	0.05950	0.94050		0.93787	0.06213	0.04790	0.95210		0.93579	0.06421	0.05015	0.94985			0.06053	0.93947		94.55
SVM Classifier	0.81914	0.18086	0.33701	0.66299		0.86302	0.13698	0.26987	0.73013		0.86639	0.13361	0.20334	0.79666			0.17617	0.82434		75.34
Knearest Neighbors	0.84657	0.15343	0.18292	0.81708		0.89349	0.10651	0.26987	0.85493		0.88990	0.11010	0.14862	0.85138			0.17324	0.82676		80.63
Ensemble			0.04038	0.95962	0.51228			0.02558	0.97442	0.77540			0.02902	0.97098	0.90898		0.04178	0.95822	1.00000	96.58

WB Timed	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.93966	0.06034	0.03004	0.96996		0.93804	0.06196	0.02903	0.97097		0.85792	0.14208	0.05488	0.94512			0.07571	0.92429		95.26
Binary LSTM	0.96536	0.03464	0.04611	0.95389		0.95145	0.04855	0.06701	0.93299		0.90132	0.09868	0.08341	0.91659			0.10793	0.89207		92.39
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble			0.02680	0.97320	0.54243			0.03861	0.96139	0.75738			0.04431	0.95569	0.88349		0.05419	0.94581	1.00000	95.90

BBox Predict	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.84348	0.15652	0.05408	0.94592		0.92105	0.07895	0.11327	0.88673		0.96162	0.03838	0.20119	0.79881			0.26626	0.73374		84.13
Binary LSTM	0.79785	0.20215	0.04617	0.95383		0.89081	0.10919	0.09435	0.90565		0.94524	0.05476	0.18714	0.81286			0.25845	0.74155		85.35
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble		0.20294	0.03101	0.96899	0.40212		0.21762	0.06225	0.93775	0.72108		0.22916	0.12005	0.87995	0.91593		0.15950	0.84050	1.00000	90.68

BBox Random	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.94514	0.05486	0.04245	0.95755		0.96385	0.03615	0.02255	0.97745		0.95824	0.04176	0.02682	0.97318			0.04170	0.95830		96.66
Binary LSTM	0.94742	0.05258	0.05410	0.94590		0.96745	0.03255	0.03283	0.96717		0.96674	0.03326	0.03798	0.96202			0.05720	0.94280		95.45
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble		0.24179	0.03166	0.96834	0.52107		0.23821	0.01874	0.98126	0.78381		0.24601	0.02150	0.97850	0.91354		0.03297	0.96703	1.00000	97.38

BBox Timed	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.97990	0.02010	0.02065	0.97935		0.97309	0.02691	0.04889	0.95111		0.96310	0.03690	0.07899	0.92101			0.13270	0.86730		92.97
Binary LSTM	0.98278	0.01722	0.02107	0.97893		0.97868	0.02132	0.04779	0.95221		0.97153	0.02847	0.08025	0.91975			0.11805	0.88195		93.32
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble		0.26664	0.01267	0.98733	0.55185		0.27209	0.02744	0.97256	0.77567		0.27840	0.04236	0.95764	0.89833		0.05601	0.94399	1.00000	96.54

Whitebox Predict	25% Adversarial					50% Adversarial NOT TRAINING SET					75% Adversarial					100% Adversarial				
Model	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN	FP	FN	TP/Recall	Precision	TN FP	FN	TP/Recall	Precision	
Binary Dense	0.84865	0.15135	0.14802	0.85198		0.88556	0.11444	0.13160	0.86840		0.90658	0.09342	0.12246	0.87754			0.14354	0.85646		86.36
Binary LSTM	0.80462	0.19538	0.13292	0.86708		0.84357	0.15643	0.11080	0.88920		0.86636	0.13364	0.09928	0.90072			0.11710	0.88290		88.50
Random Forest																				100.00
SVM Classifier																				100.00
Knearest Neighbors																				100.00
Ensemble		0.19198	0.09275	0.90725	0.45307		0.18820	0.07757	0.92243	0.74929		0.17277	0.06883	0.93117	0.90776		0.07749	0.92251	1.00000	92.08

ENSEMBLE	**0.25**	**0.5**	**0.75**	**1**	**ROUNDI**	FN		
STARCRAFT								
Whitebox Predict	0.02423	0.00938	0.00989	0.01575		2.42,0.94,0.99,1.57,		
Whitebox Random	0.02240	0.03693	0.07384	0.09940		2.24,3.69,7.38,9.94,	97.76,96.31,92.62,90.06	94.19
Whitebox Timed	0.01003	0.00003	0.00217	0.00016		1,0,0.22,0.02,	99,100,99.78,99.98	99.69
Blackbox Predict	0.01743	0.00608	0.00845	0.01609		1.74,0.61,0.85,1.61,	98.26,99.39,99.15,98.39	98.8
Blackbox Random	0.00946	0.00492	0.00312	0.00128		0.95,0.49,0.31,0.13,	99.05,99.51,99.69,99.87	99.53
Blackbox Timed	0.00061	0.00025	0.00764	0.02179		0.06,0.03,0.76,2.18,	99.94,99.97,99.24,97.82	99.24

ENSEMBLE MODEL	**0.25000**	**0.50000**	**0.75000**	**1.00000**			
Cooperative Navigation Attacks							
Whitebox Predict	0.07516	0.07567	0.05992	0.04338	7.52,7.57,5.99,4.34,	92.48,92.43,94.01,95.66	93.65
Whitebox Random	0.04221	0.01455	0.00957	0.02025	4.22,1.45,0.96,2.02,	95.78,98.55,99.04,97.98	97.84
Whitebox Timed	0.01693	0.01820	0.01544	0.01021	1.69,1.82,1.54,1.02,	98.31,98.18,98.46,98.98	98.48
Blackbox Predict	0.07799	0.07666	0.06083	0.04381	7.8,7.67,6.08,4.38,	92.2,92.33,93.92,95.62	93.52
Blackbox Random	0.02861	0.01569	0.01182	0.01348	2.86,1.57,1.18,1.35,	97.14,98.43,98.82,98.65	98.26
Blackbox Timed	0.00866	0.01642	0.03314	0.04472	0.87,1.64,3.31,4.47,	99.13,98.36,96.69,95.53	97.43

	0.25000	**0.50000**	**0.75000**	**1.00000**			
Physical Deception Attacks							
Whitebox Predict	0.09275	0.07757	0.06883	0.07749	9.27,7.76,6.88,7.75,	90.73,92.24,93.12,92.25	92.08
Whitebox Random	0.04038	0.02558	0.02902	0.04178	4.04,2.56,2.9,4.18,	95.96,97.44,97.1,95.82	96.58
Whitebox Timed	0.02680	0.03861	0.04431	0.05419	2.68,3.86,4.43,5.42,	97.32,96.14,95.57,94.58	95.9
Blackbox Predict	0.03101	0.06225	0.12005	0.15950	3.1,6.23,12,15.95,	96.9,93.77,88,84.05	90.68
Blackbox Random	0.03166	0.01874	0.02150	0.03297	3.17,1.87,2.15,3.3,	96.83,98.13,97.85,96.7	97.38
Blackbox Timed	0.01267	0.02744	0.04236	0.05601	1.27,2.74,4.24,5.6,	98.73,97.26,95.76,94.4	96.54

DENSE	**0.25000**	**0.50000**	**0.75000**	**1.00000**			
STARCRAFT							
Whitebox Predict	0.02642	0.01311	0.02364	0.07429	2.64,1.31,2.36,7.43,	97.36,98.69,97.64,92.57	96.56
Whitebox Random	0.03569	0.06809	0.15941	0.25171	3.57,6.81,15.94,25.17,	96.43,93.19,84.06,74.83	87.13
Whitebox Timed	0.00846	0.00051	0.03989	0.00153	0.85,0.05,3.99,0.15,	99.15,99.95,96.01,99.85	98.74
Blackbox Predict	0.05493	0.02443	0.02944	0.06882	5.49,2.44,2.94,6.88,	94.51,97.56,97.06,93.12	95.56
Blackbox Random	0.03583	0.02270	0.02343	0.02515	3.58,2.27,2.34,2.51,	96.42,97.73,97.66,97.49	97.32
Blackbox Timed	0.00200	0.00232	0.01632	0.07356	0.2,0.23,1.63,7.36,	99.8,99.77,98.37,92.64	97.65

BINARY DENSE	0.25000	0.50000	0.75000	1.00000			
Cooperative Navigation Attacks							
Whitebox Predict	0.06123	0.07155	0.06678	0.05620	6.12,7.15,6.68,5.62,	93.88,92.85,93.32,94.38	93.61
Whitebox Random	0.06068	0.02342	0.01632	0.02257	6.07,2.34,1.63,2.26,	93.93,97.66,98.37,97.74	96.92
Whitebox Timed	0.03587	0.03870	0.03505	0.03445	3.59,3.87,3.5,3.44,	96.41,96.13,96.5,96.56	96.4
Blackbox Predict	0.06191	0.07138	0.06613	0.05643	6.19,7.14,6.61,5.64,	93.81,92.86,93.39,94.36	93.6
Blackbox Random	0.03291	0.01947	0.01589	0.02592	3.29,1.95,1.59,2.59,	96.71,98.05,98.41,97.41	97.64
Blackbox Timed	0.01755	0.03169	0.06752	0.10125	1.75,3.17,6.75,10.13,	98.25,96.83,93.25,89.88	94.55

	0.25000	0.50000	0.75000	1.00000			
Physical Deception Attacks							
Whitebox Predict	0.14802	0.13160	0.12246	0.14354	14.8,13.16,12.25,14.35,	85.2,86.84,87.75,85.65	86.36
Whitebox Random	0.06226	0.04377	0.04292	0.05456	6.23,4.38,4.29,5.46,	93.77,95.62,95.71,94.54	94.91
Whitebox Timed	0.03004	0.02903	0.05488	0.07571	3,2.9,5.49,7.57,	97,97.1,94.51,92.43	95.26
Blackbox Predict	0.05408	0.11327	0.20119	0.26626	5.41,11.33,20.12,26.63,	94.59,88.67,79.88,73.37	84.13
Blackbox Random	0.04245	0.02255	0.02682	0.04170	4.24,2.25,2.68,4.17,	95.76,97.75,97.32,95.83	96.66
Blackbox Timed	0.02065	0.04889	0.07899	0.13270	2.07,4.89,7.9,13.27,	97.93,95.11,92.1,86.73	92.97

BINARY LSTM	0.25000	0.50000	0.75000	1.00000			
STARCRAFT							
Whitebox Predict	0.04701	0.02171	0.03535	0.06730	4.7,2.17,3.53,6.73,	95.3,97.83,96.47,93.27	95.72
Whitebox Random	0.04158	0.05840	0.18799	0.28558	4.16,5.84,18.8,28.56,	95.84,94.16,81.2,71.44	85.66
Whitebox Timed	0.02397	0.00033	0.02241	0.00177	2.4,0.03,2.24,0.18,	97.6,99.97,97.76,99.82	98.79
Blackbox Predict	0.03706	0.01657	0.02908	0.07303	3.71,1.66,2.91,7.3,	96.29,98.34,97.09,92.7	96.11
Blackbox Random	0.02777	0.01698	0.01865	0.03322	2.78,1.7,1.86,3.32,	97.22,98.3,98.14,96.68	97.58
Blackbox Timed	0.00492	0.00180	0.01550	0.07302	0.49,0.18,1.55,7.3,	99.51,99.82,98.45,92.7	97.62

BINARY LSTM	0.25000	0.50000	0.75000	1.00000			
Cooperative Navigation Attacks							
Whitebox Predict	0.10879	0.10536	0.08263	0.06103	10.88,10.54,8.26,6.1,	89.12,89.46,91.74,93.9	91.05
Whitebox Random	0.06832	0.02463	0.01598	0.03443	6.83,2.46,1.6,3.44,	93.17,97.54,98.4,96.56	96.42
Whitebox Timed	0.02871	0.03155	0.02668	0.01785	2.87,3.16,2.67,1.79,	97.13,96.84,97.33,98.21	97.38
Blackbox Predict	0.11212	0.10712	0.08359	0.06099	11.21,10.71,8.36,6.1,	88.79,89.29,91.64,93.9	90.9
Blackbox Random	0.04782	0.02573	0.01972	0.02347	4.78,2.57,1.97,2.35,	95.22,97.43,98.03,97.65	97.08
Blackbox Timed	0.01564	0.03078	0.05971	0.08025	1.56,3.08,5.97,8.03,	98.44,96.92,94.03,91.98	95.34

	0.25000	**0.50000**	**0.75000**	**1.00000**	[redacted]			
Physical Deception Attacks					[redacted]			
Whitebox Predict	0.13292	0.11080	0.09928	0.11710	[redacted]	13.29,11.08,9.93,11.71,	86.71,88.92,90.07,88.29	88.5
Whitebox Random	0.06729	0.04263	0.04769	0.06785	[redacted]	6.73,4.26,4.77,6.78,	93.27,95.74,95.23,93.22	94.36
Whitebox Timed	0.04611	0.06701	0.08341	0.10793	[redacted]	4.61,6.7,8.34,10.79,	95.39,93.3,91.66,89.21	92.39
Blackbox Predict	0.04617	0.09435	0.18714	0.25845	[redacted]	4.62,9.44,18.71,25.84,	95.38,90.56,81.29,74.16	85.35
Blackbox Random	0.05410	0.03283	0.03798	0.05720	[redacted]	5.41,3.28,3.8,5.72,	94.59,96.72,96.2,94.28	95.45
Blackbox Timed	0.02107	0.04779	0.08025	0.11805	[redacted]	2.11,4.78,8.02,11.81,	97.89,95.22,91.98,88.19	93.32

Cooperative Navigation

Epsilon	Success Replica	Ensemble Undetected Positive Rate	
0.05	0.14014	0.16562	0.166,0.313,0.429,0.499,0.543,0.572,0.586,0.583,0.569,0.551,0.529,0.511,0.484,0.465,0.446,0.421,0.401,0.385,0.374,0.358
0.1	0.16608	0.31339	0.166,0.313,0.429,0.499,0.543,0.572,0.586,0.583,0.569,0.551,0.529,0.511,0.484,0.465,0.446,0.421,0.401,0.385,0.374,0.358
0.15	0.19421	0.42870	
0.2	0.22815	0.49904	Take all successful perturbations from replica model and apply them to true ensemble.
0.25	0.25330	0.54321	
0.3	0.27484	0.57230	
0.35	0.29093	0.58568	
0.4	0.30675	0.58269	
0.45	0.32012	0.56853	
0.5	0.33322	0.55066	
0.55	0.34763	0.52883	
0.6	0.35950	0.51113	
0.65	0.37515	0.48418	
0.7	0.39063	0.46455	
0.75	0.40426	0.44606	
0.8	0.41920	0.42093	
0.85	0.42966	0.40147	
0.9	0.44101	0.38537	
0.95	0.45323	0.37401	
1	0.46132	0.35754	

Physical Deception

Epsilon	Success Replica	Ensemble Undetected Positive Rate	
0.05	0.13553	0.05595	0.056,0.113,0.164,0.216,0.274,0.315,0.337,0.361,0.374,0.387,0.392,0.391,0.394,0.393,0.393,0.393,0.393,0.396,0.392,0.389
0.1	0.14207	0.11348	0.056,0.113,0.164,0.216,0.274,0.315,0.337,0.361,0.374,0.387,0.392,0.391,0.394,0.393,0.393,0.393,0.393,0.396,0.392,0.389
0.15	0.15229	0.16352	
0.2	0.16657	0.21610	
0.25	0.18230	0.27408	
0.3	0.19994	0.31457	Take all successful perturbations from replica model and apply them to true ensemble.
0.35	0.21869	0.33723	
0.4	0.24176	0.36118	
0.45	0.26578	0.37417	
0.5	0.29204	0.38699	
0.55	0.31527	0.39165	
0.6	0.33826	0.39051	
0.65	0.35677	0.39396	
0.7	0.37848	0.39266	
0.75	0.39939	0.39309	
0.8	0.41719	0.39258	

0.85	0.43036	0.39299
0.9	0.44529	0.39595
0.95	0.45758	0.39194
1	0.46931	0.38861

StarCraft

Epsilon	Success Replica	Ensemble Undetected Positive Rate	
0.05	0.15736	0.16972	0.17,0.226,0.205,0.212,0.227,0.24,0.261,0.281,0.302,0.318,0.331,0.336,0.34,0.341,0.34,0.337,0.339,0.329,0.325,0.316
0.1	0.34374	0.22582	0.17,0.226,0.205,0.212,0.227,0.24,0.261,0.281,0.302,0.318,0.331,0.336,0.34,0.341,0.34,0.337,0.339,0.329,0.325,0.316
0.15	0.58152	0.20486	
0.2	0.72332	0.21171	
0.25	0.81122	0.22750	
0.3	0.86858	0.24013	
0.35	0.89077	0.26079	
0.4	0.89932	0.28053	
0.45	0.90191	0.30177	
0.5	0.90249	0.31797	
0.55	0.89634	0.33087	
0.6	0.89413	0.33641	
0.65	0.89154	0.33987	
0.7	0.88846	0.34148	
0.75	0.88452	0.34007	
0.8	0.87780	0.33742	
0.85	0.87405	0.33887	
0.9	0.86560	0.32863	
0.95	0.85974	0.32495	
1	0.85378	0.31597	

Navigation	25%		50%		75%		100%		FN Rate	Average FN across Attack Rate by Attack
	Recall	Precision	Recall	Precision	Recall	Precision	Recall	Precision		
White Predict	0.795	0.510	0.818	0.804	0.864	0.945	0.912	1.000	20.51,18.19,13.64,8.78	0.847
White Random	0.544	0.470	0.823	0.835	0.952	0.944	0.966	1.000	45.63,17.75,4.83,3.45	0.821
White Timed	0.914	0.622	0.917	0.847	0.945	0.952	0.976	1.000	8.58,8.3,5.51,2.45	0.938
Black Predict	0.703	0.441	0.816	0.808	0.862	0.947	0.911	1.000	29.73,18.45,13.79,8.9	0.823
Black Random	0.526	0.468	0.772	0.811	0.906	0.936	0.911	1.000	47.42,20.32,9.38,8.9	0.785
Black Timed	0.873	0.591	0.880	0.820	0.884	0.939	0.897	1.000	12.72,12.05,11.59,10.33	0.883
Average Recall Acros	0.726	0.517	0.837	0.821	0.902	0.944	0.929	1.000	27.43,16.26,9.79,7.13	

Phys Deception	0.250		0.500		0.750		1.000			
	Recall	Precision	Recall	Precision	Recall	Precision	Recall	Precision		
White Predict	0.768	0.412	0.800	0.722	0.828	0.897	0.846	1.000	23.18,20.02,17.22,15.41	0.810
White Random	0.717	0.440	0.789	0.737	0.852	0.898	0.871	1.000	28.28,21.09,14.83,12.91	0.807
White Timed	0.799	0.493	0.790	0.720	0.818	0.867	0.852	1.000	20.06,20.98,8.3,14.76	0.840
Black Predict	0.846	0.370	0.828	0.695	0.816	0.910	0.802	1.000	15.42,17.18,18.43,19.84	0.823
Black Random	0.703	0.441	0.797	0.746	0.856	0.902	0.802	1.000	29.73,20.32,14.4,19.84	0.789
Black Timed	0.821	0.506	0.812	0.743	0.824	0.884	0.802	1.000	17.91,18.82,17.58,19.84	0.815
	0.776	0.444	0.803	0.727	0.832	0.893	0.829	1.000	22.43,19.74,16.78,17.1	

Starcraft	0.250		0.500		0.750		1.000			
	Recall	Precision	Recall	Precision	Recall	Precision	Recall	Precision		
White Predict	0.844	0.416	0.890	0.655	0.905	0.783	0.940	1.000	15.57,10.99,9.51,6	0.895
White Random	0.669	0.369	0.616	0.556	0.564	0.745	0.466	1.000	33.11,38.42,43.61,53.39	0.579
White Timed	0.723	0.449	0.719	0.676	0.687	0.894	0.338	1.000	27.67,28.14,31.29,66.19	0.617
Black Predict	0.860	0.416	0.888	0.652	0.871	0.775	0.892	1.000	13.98,11.22,12.92,10.75	0.878
Black Random	0.883	0.436	0.848	0.542	0.815	0.662	0.796	1.000	11.66,15.2,18.48,20.45	0.836
Black Timed	0.881	0.483	0.840	0.673	0.864	0.690	0.803	1.000	11.91,15.98,13.58,19.67	0.847
Average	0.810	0.428	0.800	0.626	0.784	0.758	0.706	1.000	18.98,19.99,21.57,29.41	