SUPPLEMENTAL

MODELING THE MODELER: AN EMPIRICAL STUDY ON HOW MODELERS LEARN TO CREATE SIMULATIONS

Hamdi Kavak

Department of Computational and Data Sciences
George Mason University
4400 University Dr. Fairfax, VA, USA
hkavak@gmu.edu

Jose Padilla

Virginia Modeling Analysis and Simulation Center
Old Dominion University
1030 University Blvd., Suffolk, VA, USA
jpadilla@odu.com

Saikou Diallo

Virginia Modeling Analysis and Simulation Center
Old Dominion University
1030 University Blvd., Suffolk, VA, USA
sdiallo@odu.com

Anthony Barraco

Virginia Modeling Analysis and Simulation Center
Old Dominion University
1030 University Blvd., Suffolk, VA, USA
abarraco@odu.edu

This document contains one-way ANOVA test results between beginner vs. intermediate and advanced vs. expert.

1 ANOVA RESULTS: BEGINNER VS. INTERMEDIATE

Response_variable	p_value	mean_beg	mean_int	std_beg	std_int
averageActionInterval_inseconds	0.5222	143.7899	156.3000	249.8341	282.8771
averageSession_inminutes	0.1564	37.8600	32.8955	46.2179	45.4825
blockAddedPerMinute	0.1071	0.2511	0.1848	0.5696	0.4140
numOfActions	0.3638	66.8403	58.7864	115.7945	119.7705
numOfAdvancedModelBlock	0.3858	1.8649	2.0727	3.2314	2.8436
numOfBatchBlock	0.4088	0.5381	0.4682	1.1581	0.9284
numOfBuildError	0.0123	2.8845	1.8955	5.5230	3.7028
numOfBuildSuccess	0.4441	7.0221	6.0955	16.2841	14.5422
numOfChartBlock	0.6645	0.1560	0.1318	0.7709	0.5781
numOfDecisionBlock	0.1657	1.0627	1.2909	2.1732	2.1362
numOfEdges	0.0644	10.4939	12.3864	13.1344	14.5646
numOfRunButtonHitAction	0.2130	5.6855	4.4364	13.8781	10.2481
numOfSeparateBlock	0.3550	0.2641	0.3136	0.6981	0.7258
numOfSessions	0.2073	2.4324	2.1318	3.0445	3.4517
numOfTotalBlockAdditionAction	0.0517	10.5442	7.7545	19.5670	15.9140
numOfTotalBlockDeletionAction	0.8817	4.0885	4.2045	9.8714	11.5967
numOfTotalBlocks	0.1435	15.6265	17.3636	15.4987	16.0474
numOfTotalEdgeAdditionAction	0.4904	10.1499	9.0136	21.5002	22.3091
percBlockAdditionVsAllActions	0.0013	0.1403	0.1023	0.1578	0.1463
percBlockDeletionVsAllActions	0.7037	0.0480	0.0505	0.0892	0.0857
percBuildError	0.0411	0.2658	0.2099	0.3639	0.3419
percEdgeAdditionVsAllActions	0.0002	0.1037	0.0684	0.1266	0.1135
percOfAdvancedModelBlock	0.0714	0.0670	0.0795	0.0887	0.0987
percOfBuildSuccess	0.6143	0.5782	0.5946	0.4258	0.4387
percRunVsBuildTotal	0.9889	0.4775	0.4770	0.4430	0.4469
totalDays	0.4280	5.9029	7.6773	25.5877	40.6944
totalTime_inminutes	0.9712	109.2555	109.8955	209.0245	307.4048

ANOVA RESULTS: ADVANCED VS. EXPERT

Response_variable	p_value	mean_beg	mean_int	std_beg	std_int
averageActionInterval_inseconds	0.6550	200.7500	233.6000	269.8052	324.7561
averageSession_inminutes	0.2081	39.5278	26.8333	47.8590	28.8863
blockAddedPerMinute	0.4103	0.1962	0.3407	0.4684	0.9131
numOfActions	0.0327	83.1667	15.5333	168.9004	15.2739
numOfAdvancedModelBlock	0.0782	2.1944	0.7000	4.3281	1.6006
numOfBatchBlock	0.1871	0.5556	0.1667	1.5202	0.5307
numOfBuildError	0.0218	3.6944	0.5000	7.3205	1.4081
numOfBuildSuccess	0.1284	5.8611	1.0333	17.1033	1.2726
numOfChartBlock	0.1763	0.4167	0.0667	1.3810	0.2537
numOfDecisionBlock	0.0877	1.1944	0.3667	2.5391	0.6687
numOfEdges	0.1178	11.5833	5.8000	18.9818	6.7589
numOfRunButtonHitAction	0.1871	5.0556	0.8333	17.2742	1.3667
numOfSeparateBlock	0.2834	0.4444	0.1667	1.3190	0.5307
numOfSessions	0.0349	3.5556	1.3667	5.4795	0.9994
numOfTotalBlockAdditionAction	0.0679	12.5833	2.3667	29.8131	4.5142
numOfTotalBlockDeletionAction	0.0291	7.5833	0.7667	16.6345	1.6955
numOfTotalBlocks	0.2010	16.1944	10.3000	22.9755	10.6969
numOfTotalEdgeAdditionAction	0.0851	14.1944	1.6000	39.2740	3.3177
percBlockAdditionVsAllActions	0.3319	0.1365	0.0979	0.1703	0.1458
percBlockDeletionVsAllActions	0.6627	0.0462	0.0379	0.0702	0.0834
percBuildError	0.5597	0.2530	0.1958	0.3905	0.3989
percEdgeAdditionVsAllActions	0.6901	0.0862	0.0749	0.1008	0.1279
percOfAdvancedModelBlock	0.0326	0.0758	0.0333	0.0902	0.0621
percOfBuildSuccess	0.8778	0.5526	0.5708	0.4609	0.4997
percRunVsBuildTotal	0.6729	0.4290	0.3806	0.4629	0.4610
totalDays	0.4368	18.7500	9.6333	49.4307	44.1818
totalTime_inminutes	0.0133	154.7778	37.6000	246.7001	54.1445