

# Simplicits Supplementary Material

VISMAY MODI, University of Toronto, Canada

NICHOLAS SHARP, Nvidia, USA

OR PEREL, Nvidia, Israel

SHINJIRO SUEDA, Texas A&M University, USA

DAVID I. W. LEVIN, University of Toronto, Canada

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Table of Parameters and Times (in ms) Per Example

Input Type	Sim Name	Cubature Pts	Sim Steps	Newton Iters	Log Barrier Its	Per Sim Step (ms)	Handles	Training Steps	LR Start	LR End	Sampling Stdev	Per Train Step (ms)
Splats	Garden Splats	2000	100	10	1	77.01	40	30000	0.0010	0.0001	1.0000	18.69
Splats	Mic Splats	2000	100	10	1	76.50	40	30000	0.0010	0.0001	1.0000	18.60
Splats	Ficus Splats	2000	100	10	1	73.04	40	30000	0.0010	0.0001	1.0000	18.52
Splats	Lego Splats	2000	100	10	1	74.59	30	30000	0.0010	0.0001	1.0000	18.62
CT	Bladder	7000	150	5	3	1387.27	10	10000	0.0010	0.0001	1.0000	63.02
SDF	SkullStrippedBrain	2000	150	10	1	98.27	10	10000	0.0010	0.0001	1.0000	65.48
Mesh	511BeamELU	1000	30	10	1	185.13	10	10000	0.0010	0.0001	0.1000	68.53
Nerf	Iron	2000	100	10	1	81.03	10	10000	0.0010	0.0001	1.0000	138.32
Nerf	Iron Stiffer	2000	100	10	1	27.76	10	10000	0.0010	0.0001	1.0000	138.32
Nerf	Tree	2000	50	10	1	138.70	10	10000	0.0010	0.0001	1.0000	113.90
Points	Spike	2000	100	10	1	104.50	10	10000	0.0010	0.0001	1.0000	65.13
Points	Tree	2000	50	10	1	136.76	10	10000	0.0010	0.0001	1.0000	63.88
Mesh	LargeBox	5000	20	10	1	412.20	10	10000	0.0010	0.0001	0.1000	64.81
SDF	Link	1000	100	10	1	72.87	10	10000	0.0010	0.0001	1.0000	151.89
SDF	Mandelbulb	2000	50	10	1	138.40	10	10000	0.0010	0.0001	1.0000	65.29
SDF	Ribbon	1000	100	30	1	656.64	10	10000	0.0010	0.0001	1.0000	64.07
SDF	SimpleSkullBrain	2000	100	10	1	188.36	10	10000	0.0010	0.0001	1.0000	63.63
Mesh	Suzanne	1000	50	10	1	180.60	5	10000	0.0010	0.0001	0.1000	51.70
SDF	Bezier	2000	70	10	1	119.55	10	10000	0.0010	0.0001	1.0000	77.05
SDF	Burger	2000	70	10	1	125.36	10	10000	0.0010	0.0001	1.0000	82.21

Authors' addresses: Vismay Modi, University of Toronto, Toronto, Canada, [vismay@cs.toronto.edu](mailto:vismay@cs.toronto.edu); Nicholas Sharp, Nvidia, Seattle, USA, [nmwsharp@gmail.com](mailto:nmwsharp@gmail.com); Or Perel, Nvidia, Tel Aviv, Israel, [operel@nvidia.com](mailto:operel@nvidia.com); Shinjiro Sueda, Texas A&M University, College Station, USA, [sueda@tamu.edu](mailto:sueda@tamu.edu); David I. W. Levin, University of Toronto, Toronto, Canada, [diwlevin@cs.toronto.edu](mailto:diwlevin@cs.toronto.edu).

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SDF	Cables	2000	70	10	1	153.78	10	10000	0.0010	0.0001	1.0000	77.44
SDF	Capsule	2000	70	10	1	205.43	10	10000	0.0010	0.0001	1.0000	107.84
SDF	Castle	2000	70	10	1	194.09	10	10000	0.0010	0.0001	1.0000	65.40
SDF	Chain	2000	70	10	1	133.15	10	10000	0.0010	0.0001	1.0000	96.51
SDF	Cheese	2000	70	10	1	215.03	10	10000	0.0010	0.0001	1.0000	87.56
SDF	Cone	2000	70	10	1	218.63	10	10000	0.0010	0.0001	1.0000	88.57
SDF	Cube	2000	70	10	1	194.06	10	10000	0.0010	0.0001	1.0000	88.92
SDF	Cybertruck	2000	70	10	1	196.28	10	10000	0.0010	0.0001	1.0000	97.35
SDF	Cylinder	2000	70	10	1	185.83	10	10000	0.0010	0.0001	1.0000	81.67
SDF	Dalek	2000	70	10	1	200.16	10	10000	0.0010	0.0001	1.0000	61.04
SDF	Dinosaur	2000	70	10	1	126.38	10	10000	0.0010	0.0001	1.0000	79.02
SDF	Dodecahedron	2000	70	10	1	138.51	10	10000	0.0010	0.0001	1.0000	141.56
SDF	Elephant	2000	70	10	1	110.37	10	10000	0.0010	0.0001	1.0000	100.30
SDF	Fish	2000	70	10	1	122.52	10	10000	0.0010	0.0001	1.0000	112.89
SDF	Gear	2000	70	10	1	116.52	10	10000	0.0010	0.0001	1.0000	82.61
SDF	Girl	2000	70	10	1	119.23	10	10000	0.0010	0.0001	1.0000	60.56
SDF	GrandPiano	2000	70	10	1	104.82	10	10000	0.0010	0.0001	1.0000	75.75
SDF	Helix	2000	70	10	1	110.33	10	10000	0.0010	0.0001	1.0000	87.81
SDF	Hexprism	2000	70	10	1	112.23	10	10000	0.0010	0.0001	1.0000	87.65
SDF	HumanHead	2000	70	10	1	107.05	10	10000	0.0010	0.0001	1.0000	87.93
SDF	HumanSkull	2000	70	10	1	118.00	10	10000	0.0010	0.0001	1.0000	87.78
SDF	Icosahedron	2000	70	10	1	114.67	10	10000	0.0010	0.0001	1.0000	87.77
SDF	Jellyfish	2000	70	10	1	108.75	10	10000	0.0010	0.0001	1.0000	87.88
SDF	Jetfighter	2000	70	10	1	116.12	10	10000	0.0010	0.0001	1.0000	87.90
SDF	Julia	2000	70	10	1	112.98	10	10000	0.0010	0.0001	1.0000	88.20
SDF	Key	2000	70	10	1	107.79	10	10000	0.0010	0.0001	1.0000	88.68
SDF	Knob	2000	70	10	1	115.73	10	10000	0.0010	0.0001	1.0000	88.12
SDF	Lamborghini	2000	70	10	1	118.07	10	10000	0.0010	0.0001	1.0000	87.94
SDF	Mandelbulb	2000	70	10	1	112.28	10	10000	0.0010	0.0001	1.0000	88.21
SDF	MantaRay	2000	70	10	1	112.69	10	10000	0.0010	0.0001	1.0000	94.02
SDF	Mech	2000	70	10	1	115.23	10	10000	0.0010	0.0001	1.0000	88.05
SDF	Menger	2000	70	10	1	125.33	10	10000	0.0010	0.0001	1.0000	88.52
SDF	Mobius	2000	70	10	1	112.79	10	10000	0.0010	0.0001	1.0000	87.86
SDF	Mountain	2000	70	10	1	121.30	10	10000	0.0010	0.0001	1.0000	88.34
SDF	Mushroom	2000	70	10	1	111.75	10	10000	0.0010	0.0001	1.0000	89.19
SDF	Octabound	2000	70	10	1	97.48	10	10000	0.0010	0.0001	1.0000	88.44
SDF	Octahedron	2000	70	10	1	103.35	10	10000	0.0010	0.0001	1.0000	87.93
SDF	Oldcar	2000	70	10	1	118.36	10	10000	0.0010	0.0001	1.0000	88.18
SDF	PixarMike	2000	70	10	1	105.82	10	10000	0.0010	0.0001	1.0000	87.93
SDF	Pyramid	2000	70	10	1	107.72	10	10000	0.0010	0.0001	1.0000	87.83
SDF	Rock	2000	70	10	1	110.81	10	10000	0.0010	0.0001	1.0000	88.10
SDF	Rooks	2000	70	10	1	114.72	10	10000	0.0010	0.0001	1.0000	87.72
SDF	Roundbox	2000	70	10	1	114.37	10	10000	0.0010	0.0001	1.0000	88.08
SDF	Serpinski	2000	70	10	1	105.84	10	10000	0.0010	0.0001	1.0000	87.83
SDF	Snail	2000	70	10	1	117.75	10	10000	0.0010	0.0001	1.0000	87.80
SDF	Snake	2000	70	10	1	113.79	10	10000	0.0010	0.0001	1.0000	87.87
SDF	Sphere	2000	70	10	1	104.47	10	10000	0.0010	0.0001	1.0000	87.93
SDF	Spike	2000	70	10	1	115.03	10	10000	0.0010	0.0001	1.0000	87.79
SDF	Tardigrade	2000	70	10	1	112.30	10	10000	0.0010	0.0001	1.0000	87.99
SDF	Teapot	2000	70	10	1	110.79	10	10000	0.0010	0.0001	1.0000	92.23
SDF	Temple	2000	70	10	1	118.80	10	10000	0.0010	0.0001	1.0000	87.69

SDF	Tetrahedron	2000	70	10	1	120.33	10	10000	0.0010	0.0001	1.0000	87.99
SDF	TieFighter	2000	70	10	1	108.20	10	10000	0.0010	0.0001	1.0000	87.92
SDF	Torus	2000	70	10	1	105.98	10	10000	0.0010	0.0001	1.0000	87.93
SDF	Tree	2000	70	10	1	105.15	10	10000	0.0010	0.0001	1.0000	87.77
SDF	Trefoil	2000	70	10	1	107.46	10	10000	0.0010	0.0001	1.0000	87.72