Bedrich Benes

List of Publications by Year
in descending order

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Version: 2024-02-01

148 papers	3,831 citations	136950 32 h-index	149698 56 g-index
155 all docs	155 docs citations	155 times ranked	2762 citing authors

#	Article	IF	Citations
1	PTRM: Perceived Terrain Realism Metric. ACM Transactions on Applied Perception, 2022, 19, 1-22.	1.9	2
2	Systematic Review of Multimodal Humanâ€“Computer Interaction. Informatics, 2022, 9, 13.	3.9	10
3	A Survey of Trends of Building Fire Simulation in the Architecture, Engineering, and Construction (AEC) Domains. , 2022, , .		0
4	Procedural Urban Forestry. ACM Transactions on Graphics, 2022, 41, 1-18.	7.2	6
5	Automatic Differentiable Procedural Modeling. Computer Graphics Forum, 2022, 41, 289-307.	3.0	5
6	Urban tree generator: spatio-temporal and generative deep learning for urban tree localization and modeling. Visual Computer, 2022, 38, 3327-3339.	3.5	4
7	QuadStack: An Efficient Representation and Direct Rendering of Layered Datasets. IEEE Transactions on Visualization and Computer Graphics, 2021, 27, 3733-3744.	4.4	5
8	Character motion in function space. Visual Computer, 2021, 37, 735-748.	3.5	0
9	An algorithm for automatic dormant tree pruning. Applied Soft Computing Journal, 2021, 99, 106931.	7.2	13
10	Data driven analytics of porous battery microstructures. Energy and Environmental Science, 2021, 14, 2485-2493.	30.8	9
11	Do Learners Recognize and Relate to the Emotions Displayed By Virtual Instructors?. International Journal of Artificial Intelligence in Education, 2021, 31, 134-153.	5.5	32
12	Multimodal Affective Pedagogical Agents for Different Types of Learners. Advances in Intelligent Systems and Computing, 2021, , 218-224.	0.6	6
13	Wood identification based on longitudinal section images by using deep learning. Wood Science and Technology, 2021, 55, 553-563.	3.2	19
14	Automatic Deep Inference of Procedural Cities from Global-scale Spatial Data. ACM Transactions on Spatial Algorithms and Systems, 2021, 7, 1-28.	1.4	1
15	A Survey of Control Mechanisms for Creative Pattern Generation. Computer Graphics Forum, 2021, 40, 585-609.	3.0	6
16	Edge-based procedural textures. Visual Computer, 2021, 37, 2595-2606.	3.5	2
17	Deep BarkID: a portable tree bark identification system by knowledge distillation. European Journal of Forest Research, 2021, 140, 1391-1399.	2.5	7
18	Authoring consistent landscapes with flora and fauna. ACM Transactions on Graphics, 2021, 40, 1-13.	7.2	3

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19	PICO: Procedural Iterative Constrained Optimizer for Geometric Modeling. IEEE Transactions on Visualization and Computer Graphics, 2021, 27, 3968-3981.	4.4	5
20	Urban Brush: Intuitive and Controllable Urban Layout Editing. , 2021, , .		3
21	The positivity principle: do positive instructors improve learning from video lectures?. Educational Technology Research and Development, 2021, 69, 3101-3129.	2.8	27
22	TreePartNet. ACM Transactions on Graphics, 2021, 40, 1-16.	7.2	18
23	Learning to reconstruct botanical trees from single images. ACM Transactions on Graphics, 2021, 40, 1-15.	7.2	18
24	ICTree. ACM Transactions on Graphics, 2021, 40, 1-15.	7.2	5
25	3D reconstruction identifies loci linked to variation in angle of individual sorghum leaves. PeerJ, 2021, 9, e12628.	2.0	4
26	A fast pith detection for computed tomography scanned hardwood logs. Computers and Electronics in Agriculture, 2020, 170, 105107.	7.7	9
27	Voxel carvingâ€based 3D reconstruction of sorghum identifies genetic determinants of light interception efficiency. Plant Direct, 2020, 4, e00255.	1.9	21
28	A framework for multi-objective optimization of virtual tree pruning based on growth simulation. Expert Systems With Applications, 2020, 162, 113792.	7.6	6
29	An output-driven approach to design a swarming model for architectural indoor environments. Computers and Graphics, 2020, 87, 103-110.	2.5	5
30	Semiâ€Procedural Textures Using Point Process Texture Basis Functions. Computer Graphics Forum, 2020, 39, 159-171.	3.0	17
31	A Review of Training and Guidance Systems in Medical Surgery. Applied Sciences (Switzerland), 2020, 10, 5752.	2.5	11
32	2019_editorial_v2. Computer Graphics Forum, 2020, 39, 5-6.	3.0	0
33	Multiscale computational models can guide experimentation and targeted measurements for crop improvement. Plant Journal, 2020, 103, 21-31.	5.7	36
34	The Effects of Body Gestures and Gender on Viewerâ€™s Perception of Animated Pedagogical Agentâ€™s Emotions. Lecture Notes in Computer Science, 2020, , 169-186.	1.3	12
35	Deep Learning-Based Emotion Recognition from Real-Time Videos. Lecture Notes in Computer Science, 2020, , 321-332.	1.3	6
36	Sorghum Segmentation by Skeleton Extraction. Lecture Notes in Computer Science, 2020, , 296-311.	1.3	13

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37	Inverse Procedural Modeling of Branching Structures by Inferring L-Systems. ACM Transactions on Graphics, 2020, 39, 1-13.	7.2	32
38	Interactive Inverse Spatio-Temporal Crowd Motion Design. , 2020, , .		2
39	Visuohaptic experiments: Exploring the effects of visual and haptic feedback on studentsâ€™ learning of friction concepts. Computer Applications in Engineering Education, 2019, 27, 1376-1401.	3.4	9
40	Dendry. , 2019, , .		2
41	A Review of Digital Terrain Modeling. Computer Graphics Forum, 2019, 38, 553-577.	3.0	60
42	2019_editorial_v2. Computer Graphics Forum, 2019, 38, 5-6.	3.0	2
43	Procedural Riverscapes. Computer Graphics Forum, 2019, 38, 35-46.	3.0	7
44	PVRD-FASP: A Unified Solver for Modeling Carrier and Defect Transport in Photovoltaic Devices. IEEE Journal of Photovoltaics, 2019, 9, 1602-1613.	2.5	8
45	Postevent Reconnaissance Image Documentation Using Automated Classification. Journal of Performance of Constructed Facilities, 2019, 33, .	2.0	25
46	Character Motion in Function Space. , 2019, , .		1
47	Near-convex decomposition and layering for efficient 3D printing. Additive Manufacturing, 2018, 21, 383-394.	3.0	13
48	Sculpting Mountains: Interactive Terrain Modeling Based on Subsurface Geology. IEEE Transactions on Visualization and Computer Graphics, 2018, 24, 1756-1769.	4.4	23
49	Interactive Generation of Timeâ€evolving, Snowâ€Covered Landscapes with Avalanches. Computer Graphics Forum, 2018, 37, 497-509.	3.0	11
50	Visuo-haptic Simulations to Improve Studentsâ€™ Understanding of Friction Concepts. , 2018, , .		2
51	Designing a Visuohaptic Simulation to Promote Graphical Representations and Conceptual Understanding of Structural Analysis. , 2018, , .		2
52	Defect detection performance of automated hardwood lumber grading system. Computers and Electronics in Agriculture, 2018, 155, 487-495.	7.7	8
53	Improving printing orientation for Fused Deposition Modeling printers by analyzing connected components. Additive Manufacturing, 2018, 22, 720-728.	3.0	7
54	FlyCam: Multitouch Gesture Controlled Drone Gimbal Photography. IEEE Robotics and Automation Letters, 2018, 3, 3717-3724.	5.1	26

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55	Validation of automated hardwood lumber grading system. Computers and Electronics in Agriculture, 2018, 155, 496-500.	7.7	5
56	A Simple and Robust Approach to Computation of Meshes Intersection. , 2018, , .		2
57	Motion Style Retargeting to Characters With Different Morphologies. Computer Graphics Forum, 2017, 36, 86-99.	3.0	10
58	Error-Bounded and Feature Preserving Surface Remeshing with Minimal Angle Improvement. IEEE Transactions on Visualization and Computer Graphics, 2017, 23, 2560-2573.	4.4	43
59	Interactive Modeling and Authoring of Climbing Plants. Computer Graphics Forum, 2017, 36, 49-61.	3.0	23
60	Authoring landscapes by combining ecosystem and terrain erosion simulation. ACM Transactions on Graphics, 2017, 36, 1-12.	7.2	48
61	Understanding and Exploiting Object Interaction Landscapes. ACM Transactions on Graphics, 2017, 36, 1-14.	7.2	22
62	Proceduralization of urban models. , 2017, , .		1
63	Undergraduate studentsâ€™ conceptual interpretation and perceptions of haptic-enabled learning experiences. International Journal of Educational Technology in Higher Education, 2017, 14, .	7.6	18
64	Interactive example-based terrain authoring with conditional generative adversarial networks. ACM Transactions on Graphics, 2017, 36, 1-13.	7.2	87
65	IMapple: a source-sink developmental model for â€˜Golden Deliciousâ€™ apple trees. Acta Horticulturae, 2017, , 51-60.	0.2	4
66	Computational Design and Fabrication. IEEE Computer Graphics and Applications, 2017, 37, 32-33.	1.2	0
67	Crops In Silico: Generating Virtual Crops Using an Integrative and Multi-scale Modeling Platform. Frontiers in Plant Science, 2017, 8, 786.	3.6	102
68	Barcode: Global Binary Patterns for Fast Visual Inference. , 2017, , .		1
69	Exploration of affordances of visuo-haptic simulations to learn the concept of friction. , 2017, , .		7
70	Skippy. ACM Transactions on Graphics, 2017, 36, 1-12.	7.2	8
71	Understanding and exploiting object interaction landscapes. ACM Transactions on Graphics, 2017, 36, 1.	7.2	1
72	Learning geometric graph grammars. , 2016, , .		1

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73	Large Scale Terrain Generation from Tectonic Uplift and Fluvial Erosion. Computer Graphics Forum, 2016, 35, 165-175.	3.0	40
74	IMapple â€" Functional structural model of apple trees. , 2016, , .		7
75	Proceduralization for Editing 3D Architectural Models. , 2016, , .		21
76	Environmental Objects for Authoring Procedural Scenes. Computer Graphics Forum, 2016, 35, 296-308.	3.0	5
77	Computer Graphics Procedural Modeling of Soil Structure. Progress in Soil Science, 2016, , 133-144.	0.8	0
78	Inverse procedural modeling of 3D models for virtual worlds. , 2016, , .		18
79	Modeling plant life in computer graphics. , 2016, , .		10
80	Error-bounded surface remeshing with minimal angle elimination. , 2016, , .		1
81	Interactive sketching of urban procedural models. ACM Transactions on Graphics, 2016, 35, 1-11.	7.2	103
82	Connected fermat spirals for layered fabrication. ACM Transactions on Graphics, 2016, 35, 1-10.	7.2	68
83	A Review of Simulators with Haptic Devices for Medical Training. Journal of Medical Systems, 2016, 40, 104.	3.6	152
84	FOVEA: a new program to standardize the measurement of foveal pit morphology. PeerJ, 2016, 4, e1785.	2.0	18
85	Terrain Modelling from Feature Primitives. Computer Graphics Forum, 2015, 34, 198-210.	3.0	33
86	Woodification: Userâ€Controlled Cambial Growth Modeling. Computer Graphics Forum, 2015, 34, 361-372.	3.0	14
87	Procedural Editing of 3D Building Point Clouds. , 2015, , .		14
88	User-Assisted Inverse Procedural Facade Modeling and Compressed Image Rendering. Lecture Notes in Computer Science, 2015, , 126-136.	1.3	1
89	Improving the learning of physics concepts by using haptic devices. , 2015, , .		10
90	Motion retiming by using bilateral time control surfaces. Computers and Graphics, 2015, 47, 59-67.	2.5	4

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91	WorldBrush. ACM Transactions on Graphics, 2015, 34, 1-11.	7.2	50
92	Coupled segmentation and similarity detection for architectural models. ACM Transactions on Graphics, 2015, 34, 1-11.	7.2	19
93	Hydraulic Erosion Modeling on a Triangular Mesh. Lecture Notes in Geoinformation and Cartography, 2015, , 237-247.	1.0	1
94	Dapper. ACM Transactions on Graphics, 2015, 34, 1-12.	7.2	74
95	Inverse Procedural Modelling of Trees. Computer Graphics Forum, 2014, 33, 118-131.	3.0	117
96	A hybrid levelâ€ofâ€detail representation for largeâ€scale urban scenes rendering. Computer Animation and Virtual Worlds, 2014, 25, 243-253.	1.2	3
97	Proceduralization of Buildings at City Scale. , 2014, , .		11
98	A Survey on Procedural Modelling for Virtual Worlds. Computer Graphics Forum, 2014, 33, 31-50.	3.0	191
99	Clever Support: Efficient Support Structure Generation for Digital Fabrication. Computer Graphics Forum, 2014, 33, 117-125.	3.0	182
100	Windy trees. ACM Transactions on Graphics, 2014, 33, 1-11.	7.2	39
101	PackMerger: A 3D Print Volume Optimizer. Computer Graphics Forum, 2014, 33, 322-332.	3.0	97
102	Sketching human character animations by composing sequences from large motion database. Visual Computer, 2014, 30, 213-227.	3.5	21
103	A Flexible Pinhole Camera Model for Coherent Nonuniform Sampling. IEEE Computer Graphics and Applications, 2014, 34, 30-41.	1.2	1
104	Terrain generation using procedural models based on hydrology. ACM Transactions on Graphics, 2013, 32, 1-13.	7.2	71
105	Perceptual importance of lighting phenomena in rendering of animated water. ACM Transactions on Applied Perception, 2013, 10, 1-18.	1.9	3
106	A system for large-scale visualization of streaming Doppler data. , 2013, , .		1
107	Plastic trees. ACM Transactions on Graphics, 2012, 31, 1-10.	7.2	76
108	Stress relief. ACM Transactions on Graphics, 2012, 31, 1-11.	7.2	218

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109	Inverse design of urban procedural models. ACM Transactions on Graphics, 2012, 31, 1-11.	7.2	92
110	Automatic Extraction of Manhattan-World Building Masses from 3D Laser Range Scans. IEEE Transactions on Visualization and Computer Graphics, 2012, 18, 1627-1637.	4.4	61
111	Quantification of Fossil Fuel CO₂ Emissions on the Building/Street Scale for a Large U.S. City. Environmental Science & Technology, 2012, 46, 12194-12202.	10.0	211
112	Built-in Electric Field Minimization in (In, Ga)N Nanoheterostructures. Nano Letters, 2011, 11, 4515-4519.	9.1	13
113	Connected Component Labeling in CUDA. , 2011, , 569-581.		16
114	Guided Procedural Modeling. Computer Graphics Forum, 2011, 30, 325-334.	3.0	44
115	Authoring Hierarchical Road Networks. Computer Graphics Forum, 2011, 30, 2021-2030.	3.0	41
116	Large-Scale Physics-Based Terrain Editing Using Adaptive Tiles on the GPU. IEEE Computer Graphics and Applications, 2011, 31, 35-44.	1.2	28
117	Urban ecosystem design. , 2011, , .		14
118	An intuitive polygon morphing. Visual Computer, 2010, 26, 205-215.	3.5	4
119	Inverse Procedural Modeling by Automatic Generation of Lâ€systems. Computer Graphics Forum, 2010, 29, 665-674.	3.0	89
120	Building reconstruction using manhattan-world grammars. , 2010, , .		81
121	Interactive design of urban spaces using geometrical and behavioral modeling. ACM Transactions on Graphics, 2009, 28, 1-10.	7.2	50
122	Hydraulic Erosion Using Smoothed Particle Hydrodynamics. Computer Graphics Forum, 2009, 28, 219-228.	3.0	80
123	Visualization of Simulated Urban Spaces: Inferring Parameterized Generation of Streets, Parcels, and Aerial Imagery. IEEE Transactions on Visualization and Computer Graphics, 2009, 15, 424-435.	4.4	55
124	Visual Exploration of the Vulcan COâ„ Data. IEEE Computer Graphics and Applications, 2009, 29, 6-11.	1.2	4
125	Interactive design of urban spaces using geometrical and behavioral modeling. , 2009, , .		13
126	Interactive Reconfiguration of Urban Layouts. IEEE Computer Graphics and Applications, 2008, 28, 38-47.	1.2	21

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127	Real-time Data Delivery and Remote Visualization through Multi-layer Interfaces. , 2008, , .		3
128	Interactive poster: Visual analytic techniques for CO<inf>2</inf> emissions and concentrations in the United States. , 2008, , .		1
129	Interactive example-based urban layout synthesis. ACM Transactions on Graphics, 2008, 27, 1-10.	7.2	61
130	Autonomous boids. Computer Animation and Virtual Worlds, 2006, 17, 199-206.	1.2	63
131	Hydraulic erosion. Computer Animation and Virtual Worlds, 2006, 17, 99-108.	1.2	46
132	Physically-based hydraulic erosion. , 2006, , .		3
133	Tensor product surfaces as rewriting process. , 2006, , .		0
134	A Natural Interface for Sign Language Mathematics. Lecture Notes in Computer Science, 2006, , 70-79.	1.3	2
135	Towards a Modular Network-Distributed Mixed-Reality Learning Space System. Lecture Notes in Computer Science, 2006, , 637-646.	1.3	0
136	POLizied e-Learning using contract management. Computers and Education, 2005, 45, 75-103.	8.3	4
137	Using particles for 3D texture sculpting. Computer Animation and Virtual Worlds, 2001, 12, 191-201.	0.9	3
138	Parallel implementation of terrain erosion applied to the surface of Mars. , 2001, , .		5
139	Visual Model of Plant Development with Respect to Influence of Light. Eurographics, 1997, , 125-136.	0.4	3
140	Skylight approximation for simulation of plant development. , 0, , .		0
141	Layered data representation for visual simulation of terrain erosion. , 0, , .		24
142	Virtual climbing plants competing for space. , 0, , .		14
143	Modeling virtual gardens by autonomous procedural agents. , 0, , .		6
144	Modeling virtual ecosystems with the proactive guidance of agents. , 0, , .		6

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145	Virtual campeche: a web based virtual three-dimensional tour. , 0, , .		1
146	A learnerâ€centered approach for designing visuohaptic simulations for conceptual understanding of truss structures. Computer Applications in Engineering Education, 0, , .	3.4	0
147	Board # 39 : Identifying Affordances of Physical Manipulative Tools for the Design of Visuo-haptic Simulations. , 0, , .		2
148	A Guided Inquiry-Based Learning Approach to High Performance Computer Graphics Education. , 0, , .		0