List of Publication

Nobuyuki Umetani

Publication (Journal)

[1] Nobuyuki Umetani, Bernd Bickel, Learning three-dimensional flow for interactive aerodynamic design, ACM Transaction on Graphics (SIGGRAPH 2018)

[2] Nobuyuki Umetani, Athina Panotopoulou, Ryan Schmidt, Emily Whiting , “Printone: Interactive Resonance Simulation for Free-form Print-wind Instrument Design”, ACM Transaction on Graphics (SIGGARPH Asia 2016)

[3] Nobuyuki Umetani, Ryan Schmidt , “SurfCuit: Surface Mounted Circuits on 3D Prints”, IEEE Computer Graphics and Applications

[4] Tobias Martin*,Nobuyuki Umetani*,Bernd Bickel (*=joint 1st authors), “OmniAD: Data-driven Omni-directional Aerodynamics”, ACM Transaction on Graphics (SIGGRAPH 2015), 34(4), July, 2014

[5] Nobuyuki Umetani, Takeo Igarashi, Niloy J. Mitra, “Guided Exploration of Physically Valid Shapes for Furniture Design”, CACM Research Highlights, Communications of the ACM

[6] Nobuyuki Umetani, Yuki Koyama, Ryan Schmidt, Takeo Igarashi, “Pteromys: Interactive Design and Optimization of Free-formed Free-flight Model Airplanes” ACM Transaction on Graphics (SIGGRAPH 2014), 33(4), July, 2014

[7] Weiwei Xu*, Nobuyuki Umetani*, Qianwen Chao, Jie Mao, Xiaogang Jin, Xin Tong (*=joint 1st authors), “Sensitivity-optimized Rigging for Example-based Real-time Clothing Synthesis”, ACM Transaction on Graphics (SIGGRAPH 2014), 33(4), July, 2014

[8] Shunsuke Saito, Nobuyuki Umetani, Shigeo Morishima, “Macroscopic and Microscopic Deformation Coupling in Up-sampled Cloth Simulation”, Computer Animation and Virtual Worlds Journal, CASA 2014 Special Issue, 25(3-4), May-August, 2014

[9] Susumu Katayama, Nobuyuki Umetani, Toshiaki Hisada, Seiryo Sugiura, "Bicuspid aortic valves undergo excessive strain during opening: A simulation study", The Journal of Thoracic and Cardiovascular Surgery, 2013

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[12] Bo Zhu, Michiaki Iwata, Ryo Haraguchi, Takashi Ashihara, Nobuyuki Umetani, Takeo Igarashi, Kazuo Nakazawa. Sketch-based Dynamic Illustration of Fluid Systems. SIGGRAPH ASIA 2011

[13] Nobuyuki Umetani, Danny Kaufman, Takeo Igarashi, Eitan Grinspun, "Sensitive Couture for Interactive Garment Editing and Modeling", ACM Transaction on Graphics (SIGGRAPH 2011), 30(4), August, 2011

[14] Nobuyuki Umetani, Kenshi Takayama, Jun Mitani, Takeo Igarashi, "Responsive FEM for Aiding Interactive Geometric Modeling", Computer Graphics & Applications

[15] Nobuyuki Umetani, Scott Maclachlan, Kees Oosterlee, "A Multigrid-Based Shifted-Laplacian Preconditioner for a Fourth-Order Helmholtz Discretization", Numerical Linear Algebra with Applications, Volume 16, Issue 8, pp603-626,(2008)

[16] Susumu Katayama, Nobuyuki Umetani, Seiryo Sugiura, and Toshiaki Hisada, "The sinus of Valsalva relieves abnormal stress on aortic valve leaflets by facilitating smooth closure", The Journal of Thoracic and Cardiovascular Surgery, vol.136, no.6, pp.1528-1535,(2008)

Publication (Conference)

[17] Nobuyuki Umetani, "Exploring Generative 3D Shapes Using Autoencoder Networks", Siggraph Asia 2017 Technical Brief

[18] Rubaiat Habib, Tovi Grossman, Nobuyuki Umetani, George Fitzmaurice, "Motion Amplifiers: Sketching Dynamic Illustrations Using the Principles of 2D Animation", CHI 2016 Conference proceedings

[19] Andrew O. Sageman-Furnas, Nobuyuki Umetani, Ryan Schmidt, "Meltables: Fabrication of Complex 3D Curves by Melting", SIGGRAPH Asia 2015 Technical Brief

[20] James McCrae, Nobuyuki Umetani, Karan Singh, "FlatFitFab: Interactive Modeling with Planar Sections", In Proceedings of the ACM User Interface Software and Technology (UIST '14).

[21] Nobuyuki Umetani, Ryan Schmidt, Jos Stam, "Position-based Elastic Rod", In Proceedings of the 21014 ACM SIGGRAPH/Eurographics Symposium on Computer Animation (SCA '14)

[22] Nobuyuki Umetani, Ryan Schmidt, "Cross-sectional Structural Analysis for 3D Printing Optimization", SIGGRAPH Asia 2013 Technical Brief

[23] Yupeng Zhang, Teng Han, Zhimin Ren, Nobuyuki Umetani, Xin Tong, Yang Liu, Takaaki Shiratori, Xiang Cao, "BodyAvatar: Creating freeform 3D avatars using first-person body gestures", In Proceedings of the ACM Symposium on User Interface Software and Technology (UIST '12).

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[25] Nobuyuki Umetani, Kenshi Takayama, Jun Mitani, Takeo Igarashi, "Designing Custom-made Metallophone with Concurrent Eigenanalysis", In Proceedings of the 2010 New Interfaces for Musical Expression (NIME++2010)

[26] Yohsuke Furuta, Nobuyuki Umetani, Jun Mitani, Takeo Igarashi and Yukio Fukui, "A Film Balloon Design System Integrated with Shell Element Simulation" (short paper), Eurographics 2010

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"Introduction of Finite Element Methods in Computer Graphics", CG Gems JP 2013, chapter 11 (in Japanese).

"Clothing Simulation and Self-collision Handling using Finite Element Method", CG Gems JP 2012, chapter 9 (in Japanese).

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Eitan Grinspun, Daniel M Kaufman, Nobuyuki Umetani, Takeo Igarashi, Methods, systems, and media for interactive garment modeling and editing, US Patent App. 13883563, 2014/4/24