Jakob Andreas Bærentzen - DTU Orbit (31/12/2017)

Bærentzen, Jakob Andreas
janba@dtu.dk
Department of Applied Mathematics and Computer Science - Associate Professor
Image Analysis & Computer Graphics

Publications:

**Cache-mesh, a Dynamics Data Structure for Performance Optimization**
Publication: Research - peer-review › Journal article – Annual report year: 2017

**Multi-phase Volume Segmentation with Tetrahedral Mesh**
Nguyen Trung, T., Dahl, V. A. & Bærentzen, J. A. 2017
Publication: Research - peer-review › Paper – Annual report year: 2017

**Scene reassembly after multimodal digitization and pipeline evaluation using photorealistic rendering**
Publication: Research - peer-review › Journal article – Annual report year: 2017

**Cuttable Ruled Surface Strips for Milling**
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

**Designing for hot-blade cutting: Geometric Approaches for High-Speed Manufacturing of Doubly-Curved Architectural Surfaces**
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

**Hot Blade Cuttings for the Building Industries**
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

**Improving topology optimization intuition through games**
Publication: Research - peer-review › Journal article – Annual report year: 2016

**Interactive Appearance Prediction for Cloudy Beverages**
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

**Interactive directional subsurface scattering and transport of emergent light**
Publication: Research - peer-review › Journal article – Annual report year: 2016
Interactive Topology Optimization
Publication: Research › Ph.D. thesis – Annual report year: 2016

Rationalization with ruled surfaces in architecture
Publication: Research › Ph.D. thesis – Annual report year: 2016

Robotic Hot-Blade Cutting: An Industrial Approach to Cost-Effective Production of Double Curved Concrete Structures
Publication: Research - peer-review › Book chapter – Annual report year: 2016

Tangible 3D modeling of coherent and themed structures
Publication: Research - peer-review › Journal article – Annual report year: 2016

3D interactive topology optimization on hand-held devices
Publication: Research - peer-review › Journal article – Annual report year: 2014

Combined Shape and Topology Optimization
Publication: Research › Ph.D. thesis – Annual report year: 2015

Combined shape and topology optimization of 3D structures
Publication: Research - peer-review › Conference article – Annual report year: 2014

Interactive Global Illumination Effects Using Deterministically Directed Layered Depth Maps
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Advising students in technical projects - recognizing problem scenarios
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Automatic balancing of 3D models
Publication: Research - peer-review › Journal article – Annual report year: 2014

Interactive Shape Modeling using a Skeleton-Mesh Co-Representation
Publication: Research - peer-review › Journal article – Annual report year: 2014
Multiphase flow of immiscible fluids on unstructured moving meshes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Realistic Virtual Cuts
(IMM-PHD-2012; No. 270).
Publication: Research › Ph.D. thesis – Annual report year: 2012

Real-Time Rendering of Teeth with No Preprocessing
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Registration-based Interpolation Real-Time Volume visualization
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

3D Shape Modeling Using High Level Descriptors
Publication: Research › Ph.D. thesis – Annual report year: 2012

Anisotropic 3D texture synthesis with application to volume rendering
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Cut Locus Construction using Deformable Simplicial Complexes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Descriptor Based Analysis of Digital 3D Shapes
Publication: Research › Ph.D. thesis – Annual report year: 2012

Descriptor Based Classification of Shapes in Terms of Style and Function
Publication: Research › Report – Annual report year: 2011

Example-based style classification
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011
Grammar for general purpose procedural modeling
Christiansen, A. N. & Bærentzen, J. A. 2011
Publication: Research › Poster – Annual report year: 2011

Mathematical foundation of the optimization-based fluid animation method
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Real time ray tracing of skeletal implicit surfaces
Rouiller, O. & Bærentzen, J. A. 2011
Publication: Research - peer-review › Poster – Annual report year: 2011

Deformable Simplicial Complexes
Publication: Research › Ph.D. thesis – Annual report year: 2010

Generating quality tetrahedral meshes from binary volumes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Lecture Notes on Real-Time Graphics
Bærentzen, J. A. 2010
Publication: Education › Compendium/lecture notes – Annual report year: 2010

Markov Random Fields on Triangle Meshes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2010

Markov Random Field Surface Reconstruction
Publication: Research - peer-review › Journal article – Annual report year: 2010

Optimization-based Fluid Simulation on Unstructured Meshes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2010

Surfel Based Geometry Reconstruction
Publication: Research - peer-review › Article in proceedings – Annual report year: 2010

Camera Resectioning from a Box
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Height and Tilt Geometric Texture
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009
Regularisation of 3D Signed Distance Fields
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Shape Analysis Using the Auto Diffusion Function
Publication: Research - peer-review › Conference article – Annual report year: 2009

Tetrahedral Mesh Improvement Using Multi-face Retriangulation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Markov Random Fields on 3D Polygonal Meshes
Publication: Research › Conference abstract in proceedings – Annual report year: 2008

Shader-Based Wireframe Drawing
Publication: Research › Journal article – Annual report year: 2008

Two Methods for Antialiased Wireframe Drawing with Hidden Line Removal
Publication: Research - peer-review › Article in proceedings – Annual report year: 2008

Boneless Pose Editing and Animation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2007

Variational Volumetric Surface Reconstruction from Points
Publication: Research - peer-review › Article in proceedings – Annual report year: 2007

3D Distance Fields: A Survey of Techniques and Applications
Publication: Research - peer-review › Journal article – Annual report year: 2006

Optimizing 3D Triangulations to Recapture Sharp Edges
Bærentzen, J. A. 2006
Publication: Research - peer-review › Report – Annual report year: 2006

Single-pass Wireframe Rendering
Publication: Research › Poster – Annual report year: 2006

From Points to Smooth Surfaces
Publication: Research › Article in proceedings – Annual report year: 2005
Hardware-accelerated Point Generation and Rendering of Point-based Impostors
Publication: Research - peer-review › Journal article – Annual report year: 2005

Robust Generation of Signed Distance Fields from Triangle Meshes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2005

Signed distance computation using the angle weighted pseudonormal
Publication: Research - peer-review › Journal article – Annual report year: 2005

Signed Distance Computation using the Angle Weighted Pseudo-normal
Publication: Research - peer-review › Journal article – Annual report year: 2005

Hardware Accelerated Point Rendering of Isosurfaces
Bærentzen, J. A. & Christensen, N. J. 2003 In : Journal of WSCG. 11, 1, p. 41-48
Publication: Research - peer-review › Conference article – Annual report year: 2003

PDE Based Surface Estimation for Structure from Motion.
Publication: Research - peer-review › Article in proceedings – Annual report year: 2003

Pseudo—Normals for Signed Distance Computation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2003

Computing discrete signed distance fields from triangle meshes
Bærentzen, J. A. & Aanæs, H. 2002
Publication: Research - peer-review › Report – Annual report year: 2002

Generating Signed Distance Fields From Triangle Meshes
Publication: Research - peer-review › Report – Annual report year: 2002

Interactive Modelling of Shapes Using the Level-Set Method
Publication: Research - peer-review › Journal article – Annual report year: 2002

Manipulation of volumetric solids with applications to sculpting
Publication: Research › Ph.D. thesis – Annual report year: 2002

Using Cellular Phones to Interact with Virtual Environments
Larsen, B. D., Bærentzen, J. A. & Christensen, N. J. 2002
Publication: Research › Poster – Annual report year: 2002

Volume Sculpting Using the Level-Set Method
Bærentzen, J. A. & Christensen, N. J. 2002 International Conference on Shape Modelling and Applications (SMI). IEEE
Publication: Research - peer-review › Article in proceedings – Annual report year: 2002
A Technique for Volumetric CSG Based on Morphology
Publication: Research - peer-review › Article in proceedings – Annual report year: 2001

On the implementation of fast marching methods for 3D lattices
Bærentzen, J. A. 2001
Publication: Research › Report – Annual report year: 2001

Volume Sculpting: Intuitive, Interactive 3D Shape Modelling
Bærentzen, J. A. 2001
Publication: Research › Poster – Annual report year: 2001

A Morphological Approach to the Voxelization of Solids
Publication: Research - peer-review › Article in proceedings – Annual report year: 2000

Octree-based Volume Sculpting
Publication: Research - peer-review › Article in proceedings – Annual report year: 1998

Projects:

Smart Manufacturing Frameworks
Maier, D., Bærentzen, J. A. & Larsen, J. E.
01/09/2017 → 01/12/2020
Project: PhD

The Statistics of Estimated Surfaces
Jensen, J. N., Aanæs, H., Bærentzen, J. A. & De Chiffre, L.
01/01/2017 → 31/12/2019
Project: PhD

A Traceable 3D Scanning and Reconstruction Pipeline
Gawrilowicz, F., Bærentzen, J. A. & Dahl, A. B.
15/11/2016 → 14/11/2019
Project: PhD

Surface Design and Rationalization for Robotic Hotwire and Hotblade Cutting Techniques
Fisker, A., Brander, D., Bærentzen, J. A. & Gravesen, J.
15/12/2015 → 14/12/2018
Project: PhD

Digital Factory
Brander, D., Gravesen, J., Bærentzen, J. A. & Fisker, A.
01/03/2015 → 15/12/2018
Project

Segmentation and Reconstruction of Multi-Phase Structures using the Deformable Simplicial Complex Method
Nguyen Trung, T., Bærentzen, J. A. & Dahl, V. A.
01/11/2014 → 13/02/2018
Project: PhD
Automatic Quantitative Image Analysis of 3D Micrographs
01/03/2007 → 22/09/2010
Project: PhD

Lighting Design and Real-time Global Illumination
Kristensen, A. W., Christensen, N. J., Bærentzen, J. A., Henriksen, K. & Myszkowski, K.
01/02/2006 → 30/03/2011
Project: PhD

Virtuel reality - Volume sculpting
Bærentzen, J. A., Christensen, N. J., Henriksen, K., Chen, M. & Takala, T.
01/03/1998 → 06/03/2003
Project: PhD

Computer Graphics and CAD
Christensen, N. J., Nielsen, H. P., Jensen, H. W., Bormann, K. & Bærentzen, J. A.
01/02/1988 → …
Project

Activities:

Symposium on Geometry Processing 2017
Bærentzen, J. A. (Organizer)
1 Jul 2017 → 5 Jul 2017
Activity: Attending an event › Participating in or organising a conference

Computer Graphics Forum (Journal)
Bærentzen, J. A. (Reviewer)
1 May 2017 → 1 May 2020
Activity: Research › Journal editor