

J. Andreas Bærentzen, Associate Professor

I was born 31 May, 1973. I live in Copenhagen and work in the Department of Applied Mathematics and Computer Science at the Technical University of Denmark. Email: janba@dtu.dk

My research area is computer graphics with emphasis on the digital representation of shape. In particular, I investigate shape representation and manipulation methods for applications such as interactive sculpting, simulation and modeling of dynamic phenomena, procedural synthesis of 3D models, and the creation of digital prototypes. I am also interested in many aspects of real-time graphics.

Education

4 March 2003, Ph.D., Technical University of Denmark.

27 May 1998, M.Sc.Eng., Technical University of Denmark.

Selected Publications

Topology optimization using an explicit interface representation A. N. Christiansen, M. Nobel-Jørgensen, N. Aage, O. Sigmund, J. A. Bærentzen, Structural and Multidisciplinary Optimization, 2013, p. 13.

Guide to Computational Geometry Processing: Foundations, Algorithms, and Methods. J. A. Bærentzen, J. Gravesen, F. Anton, H. Aanæs, Springer 2012, 336 pages.

Multiphase flow of immiscible fluids on unstructured moving meshes. M. K. Misztal, K. Erleben, J. Fursun, B. B. Christensen, J. A. Bærentzen, R. Bridson. Proceedings of The 11th Symposium on Computer Animation (SCA 2012), July 2012, Lausanne, Switzerland. (best paper award)

Topology Adaptive Interface Tracking Using the Deformable Simplicial Complex Method. M. K. Misztal, J. A. Bærentzen, ACM Transactions on Graphics, 31(3), Article 24, May 2012. (Presented at SIGGRAPH 2012)

Converting Skeletal Structures to Quad-Dominant Meshes. J. A. Bærentzen, M. K. Misztal, K. Welnicka, 36(5): 555-561, 2012. Proceedings of Shape Modelling International, May 22-25 2012, College Station, Texas, USA.

Example based style classification. K. Welnicka, J. A. Bærentzen, H. Aanæs, and R. Larsen, MICCAI workshop on Mesh Processing in Medical Image Analysis, September 18, 2011, Toronto, Canada. (best paper award)

Shape Analysis Using the Auto Diffusion Function. K. Gebal, J. A. Bærentzen, H. Aanæs, R. Larsen, Computer Graphics Forum, 28(5):1405-1413, 2009. (Presented at Symposium on Geometry Processing 2009, June 14-18, 2009, Berlin, Germany)

Two Methods for Antialiased Wireframe Drawing with Hidden Line Removal. J. A. Bærentzen, S. L. Nielsen, M. Gjør, and B. D. Larsen, Proceedings of the Spring Conference on Computer Graphics 2008, pages: 189-195, April 2008, Budmerice, Slovakia. (1st prize best presentation, 2nd prize best paper)

3D Distance Fields: A Survey of Techniques and Applications. M. W. Jones, J. A. Bærentzen, M. Sramek, Transactions on Visualization and Computer Graphics, vol. 12(4):581-599, 2006.

Signed Distance Computation using the Angle Weighted Pseudonormal. J. A. Bærentzen and H. Aanæs, Transactions on Visualization and Computer Graphics, 11(3):243-253, May/June, 2005.

Interactive Modelling of Shapes Using the Level-Set Method J. A. Bærentzen, N. J. Christensen, International Journal of Shaping Modeling (ISSN: 0218-6543), 8(2): 79-97, 2002.

Jobs and Professional Experience

2012– Chairman of the DTU Compute board of studies

2007–2011 Director of Studies for the M.Sc. education *Digital Media Engineering*.

2007– Associate Professor at DTU Compute (previously DTU Informatics).

2002–2007 Assistant Professor at DTU Informatics (12 weeks paternity leave during summer 2006)

2003–2004 Consultancy for Videometer A/S.

2001–2002 Amanuensis at DTU Informatics.

2000–2002. Software development for Byggeriets IT A/S.

1995–1997. Part-time Internet system administrator.

Talks, Visits, Conferences (since 2005)

August 2013–June 2014 Sabbatical: Visiting the Dynamic Graphics Project, University of Toronto, Toronto, Canada.

June 28, 2012, Interview: I talk about computer graphics in movies in the AK 24Syv radio broadcast.

2003-2011, Chair of the Graphical Visionday at DTU Informatics. From 2012 the Visionday is a single day, multi track event.

September 2010, Session organizer (with Ronald Azuma, Nokia) for the Augmented Reality session at the 2010 EU-US Frontiers of Engineering Meeting, September 1-3, 2010 Jesus College, Cambridge, UK.

2008, Chair for local organization of the Symposium on Geometry Processing 2008 and member of the international program committee. IPC member in 2010.

2006–2010, Member of the international program committee of the International Workshop on Volume Graphics.

July 2010. Talk: *Data Structures for sparse volumetric data* at Summer School on Sparsity in Image and Signal Analysis at Hólar, Iceland, August 2010

November 2007. Talk: *Real-Time Graphics for Other Purposes than Games* at the D3 Expo in Øksnehallen, Copenhagen.

July 2005, Talk: *Shape Modelling using Distance Fields* at the AIM@SHAPE Summer School on Interactive Shape Modeling Darmstadt.

Courses (responsible or co-responsible)

Real-time Graphics, Computational Geometry Processing, Project Work in Digital media.

Students

PhD. Students: Asger Nyman Christiansen (NextTop), Morten Nobel Jørgensen (NextTop), Kasper Hornbak Steenstrup (Blade Runner, co-advisor). Past PhD students: Lasse Farnung Laursen (co-advisor), Katarzyna Welnicka, Marek Krzysztof Misztal, Vedrana Andersen (co-advisor).

Counting current projects, I have been the main thesis project advisor of 22 M.Sc. students, 13 B.Sc. students, and three B.Eng. students since 2005.

Funding

Current: *Topologioptimering - Den Næste Generation (NextTop)*. (DKK 12.096.000,- – primary investigator: Ole Sigmund, DTU Mek.), *Blade Runner* (DKK 24.000.000,- Advanced Tech. Foundation project led by Odico.)

Past: *Digitale Prototyper*. Collaboration with the Alexandra Institute. (DKK 3.052.000,- – set aside for collaboration with DTU Compute).

Publications

2013

Topology Optimization using an Explicit Interface Representation

Christiansen, Asger Nyman ; Nobel-Jørgensen, Morten ; Bærentzen, J. Andreas ; Aage, Niels ; Sigmund, Ole

Presented at: 10th World Congress on Structural and Multidisciplinary Optimization, Orlando, FL

Type: Conference abstract for conference (Peer reviewed)

Status: Published | Year: 2013

Improving Topology Optimization using Games

Nobel-Jørgensen, Morten ; Christiansen, Asger Nyman ; Bærentzen, J. Andreas ; Aage, Niels ; Sigmund, Ole

Presented at: 10th World Congress on Structural and Multidisciplinary Optimization, Orlando, FL

Type: Conference abstract for conference (Peer reviewed)

Status: Published | Year: 2013

Topology optimization using an explicit interface representation

Christiansen, Asger Nyman ; Nobel-Jørgensen, Morten ; Aage, Niels ; Sigmund, Ole ; Bærentzen, J. Andreas

in journal: Structural and Multidisciplinary Optimization (ISSN: 1615-147X) (DOI: <http://dx.doi.org/10.1007/s00158-013-0983-9>), pages: 13, 2013

Type: Journal article (Peer reviewed)

Status: E-pub ahead of print | Year: 2013 | DOI: <http://dx.doi.org/10.1007/s00158-013-0983-9>

Multiphase Flow of Immiscible Fluids on Unstructured Moving Meshes

Misztal, Marek Krzysztof ; Erleben, Kenny ; Bargteil, Adam ; Fursund, Jens ; Christensen, Brian Bunch ; Bærentzen, J. Andreas ; Bridson, Robert

in journal: IEEE Transactions on Visualization and Computer Graphics (ISSN: 1077-2626) (DOI: <http://dx.doi.org/10.1109/TVCG.2013.97>), vol: 20, issue: 1, pages: 4-16, 2013

Type: Journal article (Peer reviewed)

Status: Published | Year: 2013 | DOI: <http://dx.doi.org/10.1109/TVCG.2013.97>

PorkCAD: Case study of the design of a pork product prototyper

Laursen, Lasse Farnung ; Bærentzen, J. Andreas ; Igarashi, T. ; Petersen, Michael Kai ; Clemmensen, Line Katrine Harder ; Ersbøll, Bjarne Kjær ; Christensen, Lars B.

part of: Proceedings of IASDR 2013, pages: 1134-1, 2013,

Presented at: 5th International Congress of International Association of Societies of Design Research (IASDR 2013), Tokyo

Type: Article in proceedings (Peer reviewed)

Status: Published | Year: 2013

Pond of Illusion: Interacting through Mixed Reality

Nobel-Jørgensen, Morten ; Nielsen, Jannik Boll ; Larsen, Anders Boesen Lindbo ; Olsen, Mikkel Damgaard ; Frisvad, Jeppe Revall ; Bærentzen, J. Andreas

part of: Proceedings of SIGGRAPH Asia 2013 Posters (ISBN: 978-1-4503-2634-6), 2013,

Association for Computing Machinery,

Presented at: The 6th ACM SIGGRAPH Conference and Exhibition on Computer Graphics and Interactive Techniques in Asia, Hong Kong

Type: Conference abstract in proceedings (Peer reviewed)

Status: Published | Year: 2013 | DOI: <http://dx.doi.org/10.1145/2542302.2542334>

2012

Realistic Virtual Cuts

Laursen, Lasse Farnung ; Ersbøll, Bjarne Kjær (Supervisor) ; Bærentzen, J. Andreas (Supervisor)

Technical University of Denmark, pages: 156

Type: Ph.D. thesis

Status: Submitted | Year: 2012

Automatic Quality Measurement and Parameter Selection for Example-based Texture Synthesis

Laursen, Lasse Farnung ; Clemmensen, Line Katrine Harder ; Bærentzen, J. Andreas ; Igarashi, T. ; Ersbøll, Bjarne Kjær

Publisher: Technical University of Denmark, Report name: Automatic Quality Measurement and Parameter Selection for Example-based Texture Synthesis, pages: 31

Type: Report

Status: Published | Year: 2012

Converting skeletal structures to quad dominant meshes

Bærentzen, J. Andreas ; Misztal, Marek Krzysztof ; Welnicka, Katarzyna

in journal: Computers & Graphics (ISSN: 0097-8493) (DOI: <http://dx.doi.org/10.1016/j.cag.2012.03.016>), vol: 36, issue: 5, pages: 555-561, 2012

Presented at: Shape Modeling International Conference, SMI 2012, College Station, TX

Type: Conference article (Peer reviewed)

Status: Published | Year: 2012 | DOI: <http://dx.doi.org/10.1016/j.cag.2012.03.016>

Topology Adaptive Interface Tracking Using the Deformable Simplicial Complex

Misztal, Marek Krzysztof ; Bærentzen, J. Andreas

in journal: A C M Transactions on Graphics (ISSN: 0730-0301) (DOI: <http://dx.doi.org/10.1145/2167076.2167082>), vol: 31, issue: 3, pages: No. 24, 2012

Type: Journal article (Peer reviewed)

Status: Published | Year: 2012 | DOI: <http://dx.doi.org/10.1145/2167076.2167082>

Guide to Computational Geometry Processing

Bærentzen, J. Andreas ; Gravesen, Jens ; Anton, François ; Aanæs, Henrik

Publisher: Springer, (ISBN: 978-1-4471-4074-0), pages: 325

Type: Book (Peer reviewed)

Status: Published | Year: 2012 | DOI: <http://dx.doi.org/10.1007/978-1-4471-4075-7>

Multiphase flow of immiscible fluids on unstructured moving meshes

Misztal, Marek Krzysztof ; Erleben, Kenny ; Bargteil, Adam ; Fursund, Jens ; Christensen, Brian Bunch ; Bærentzen, J. Andreas ; Bridson, Robert
part of: Eurographics 2012, 2012, Eurographics Association,
Presented at: The 11th Symposium on Computer Animation (SCA 2012), Lausanne
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2012

Real-Time Rendering of Teeth with No Preprocessing

Larsen, Christian Thode ; Frisvad, Jeppe Revall ; Jensen, Peter Dahl Ejby ; Bærentzen, J. Andreas
part of: Advances in Visual Computing (ISBN: 978-3-642-33190-9), pages: 334-345, 2012,
Springer,
Presented at: 8th International Symposium on Visual Computing, Rethymnon
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2012 | DOI: http://dx.doi.org/10.1007/978-3-642-33191-6_33

Generic Graph Grammar: A Simple Grammar for Generic Procedural Modelling

Christiansen, Asger Nyman ; Bærentzen, J. Andreas
part of: Proceedings of the 28th Spring conference on Computer Graphics, pages: 85-92, 2012,
Association for Computing Machinery,
Presented at: 28th Spring conference on Computer Graphics, Smolenice
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2012 | DOI: <http://dx.doi.org/10.1145/2448531.2448542>

Registration-based Interpolation Real-Time Volume visualization

Laursen, Lasse Farnung ; Ólafsdóttir, Hildur ; Bærentzen, J. Andreas ; Hansen, Michael Sass ;
Ersbøll, Bjarne Kjær
part of: Proceedings of the 28th Spring Conference on Computer Graphics, pages: 15-21, 2012,
Association for Computing Machinery,
Presented at: 28th Spring conference on Computer Graphics, Smolenice
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2012 | DOI: <http://dx.doi.org/10.1145/2448531.2448533>

2011

Anisotropic 3D texture synthesis with application to volume rendering

Laursen, Lasse Farnung ; Ersbøll, Bjarne Kjær ; Bærentzen, J. Andreas
part of: WSCG' 2011 Communication Papers Proceedings (ISBN: 978-80-86943-82-4), pages:
49-57, 2011,
Presented at: 19th International Conference on Computer Graphics, Visualization and Computer
Vision, Plzen
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2011

Mathematical foundation of the optimization-based fluid animation method

Erleben, Kenny ; Misztal, Marek Krzysztof ; Bærentzen, J. Andreas
part of: SCA '11 Proceedings of the 2011 ACM SIGGRAPH/Eurographics Symposium on Computer Animation (ISBN: 978-1-4503-0923-3), pages: 101-110, 2011, ACM,
Presented at: 34th International Conference and Exhibition on Computer Graphics and Interactive Techniques, San Diego, CA
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2011 | DOI: <http://dx.doi.org/10.1145/2019406.2019420>

Cut Locus Construction using Deformable Simplicial Complexes

Misztal, Marek Krzysztof ; Bærentzen, J. Andreas ; Anton, François ; Markvorsen, Steen
part of: 2011 Eighth International Symposium on Voronoi Diagrams in Science and Engineering (ISVD) (ISBN: 978-1-4577-1026-1), pages: 134-141, 2011, IEEE,
Presented at: 8th International Symposium on Voronoi Diagrams in Science and Engineering, Qingdao
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2011 | DOI: <http://dx.doi.org/10.1109/ISVD.2011.26>

Real time ray tracing of skeletal implicit surfaces

Rouiller, Olivier ; Bærentzen, J. Andreas
Presented at: Visionday : Industial, Lyngby, Denmark
Type: Poster (Peer reviewed)
Status: Published | Year: 2011

Descriptor Based Classification of Shapes in Terms of Style and Function

Welnicka, Katarzyna ; Bærentzen, J. Andreas ; Aanæs, Henrik ; Larsen, Rasmus
Publisher: Technical University of Denmark, Report name: Descriptor Based Classification of Shapes in Terms of Style and Function, Number: , pages: 43
Type: Report
Status: Published | Year: 2011

Example based style classification

Welnicka, Katarzyna ; Bærentzen, J. Andreas ; Aanæs, Henrik ; Larsen, Rasmus
part of: Proceedings of the MICCAI workshop on Mesh Processing in Medical Image Analysis (MeshMed), 2011,
Presented at: MICCAI workshop on Mesh Processing in Medical Image Analysis, Toronto
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2011

Grammar for general purpose procedural modeling

Christiansen, Asger Nyman ; Bærentzen, J. Andreas
Presented at: Visionday : Graphical, Lyngby, Denmark
Type: Poster
Status: Published | Year: 2011

Descriptor Based Analysis of Digital 3D Shapes

Welnicka, Katarzyna ; Bærentzen, J. Andreas (Supervisor)
Technical University of Denmark (DTU), pages: 157
Type: Ph.D. thesis

Status: Published | Year: 2011

3D Shape Modeling Using High Level Descriptors

Dahl, Vedrana Andersen ; Aanæs, Henrik (Supervisor) ; Bærentzen, J. Andreas (Supervisor)
DTU Informatics, Building 321, pages: 139
Type: Ph.D. thesis
Status: Published | Year: 2011

2010

Lecture Notes on Real-Time Graphics

Bærentzen, J. Andreas
Type: Compendium/lecture notes
Status: Published | Year: 2010

Markov Random Field Surface Reconstruction

Paulsen, Rasmus Reinhold ; Bærentzen, J. Andreas ; Larsen, Rasmus
in journal: I E E E Transactions on Visualization and Computer Graphics (ISSN: 1077-2626) (DOI: <http://dx.doi.org/10.1109/TVCG.2009.208>), vol: 16, issue: 4, pages: 636-646, 2010
Type: Journal article (Peer reviewed)
Status: Published | Year: 2010 | DOI: <http://dx.doi.org/10.1109/TVCG.2009.208>

Optimization-based Fluid Simulation on Unstructured Meshes

Misztal, Marek Krzysztof (Invited author) ; Bridson, Robert (Invited author) ; Erleben, Kenny (Invited author) ; Bærentzen, J. Andreas (Invited author) ; Anton, François (Invited author)
part of: Proceedings of the 7th Workshop on Virtual Reality Interaction and Physical Simulation, 2010,
Presented at: 7th Workshop on Virtual Reality Interaction and Physical Simulation : VRIPHYS, Copenhagen
Type: Article in proceedings (Peer reviewed) | Invited contribution
Status: Published | Year: 2010

Deformable Simplicial Complexes

Misztal, Marek Krzysztof ; Anton, François (Supervisor) ; Bærentzen, J. Andreas (Supervisor)
Technical University of Denmark (DTU),
Type: Ph.D. thesis
Status: Published | Year: 2010

Generating quality tetrahedral meshes from binary volumes

Hansen, Mads Fogtmann ; Bærentzen, J. Andreas ; Larsen, Rasmus
part of: Proceedings of the VISAPP (ISBN: 978-3-642-11839-5), 2009, Springer,
Presented at: 4th International Conference on Computer Vision Theory and Applications, Lisboa
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2010

Markov Random Fields on Triangle Meshes

Dahl, Vedrana Andersen ; Aanæs, Henrik ; Bærentzen, J. Andreas ; Nielsen, Mads
part of: 18th International Conference in Central Europe on Computer Graphics, Visualization and
Computer Vision (ISBN: 978-80-86943-87-9), pages: 265-270, 2010,
Presented at: 18th International Conference on Computer Graphics, Visualization and Computer
Vision, Plzen
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2010

Surfel Based Geometry Resonstruction

Dahl, Vedrana Andersen ; Aanæs, Henrik ; Bærentzen, J. Andreas
part of: Theory and Practice of Computer Graphics 2010 (ISBN: 978-3-905673-75-3), pages:
39-44, 2010, Eurographics Association,
Presented at: Theory and Practice of Computer Graphics, Sheffield
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2010

2009

Camera Resectioning from a Box

Aanæs, Henrik ; Josephson, Klas ; Anton, François ; Bærentzen, J. Andreas ; Kahl, Fredrik
part of: 16th Scandinavian Conference on Image Analysis, 2009,
Presented at: 16th Scandinavian Conference on Image Analysis (SCIA), Oslo
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2009

Regularisation of 3D Signed Distance Fields

Paulsen, Rasmus Reinhold ; Bærentzen, J. Andreas ; Larsen, Rasmus
part of: Proceedings of the 16th Scandinavian Conference on Image Analysis (ISBN:
978-3-642-02229-6), pages: 513-519, 2009, Springer,
Presented at: 16th Scandinavian Conference on Image Analysis (SCIA), Oslo
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2009 | DOI: <http://dx.doi.org/10.1007/978-3-642-02230-2>

Tetrahedral Mesh Improvement Using Multi-face Retriangulation

Misztal, Marek Krzysztof ; Bærentzen, J. Andreas ; Anton, François ; Erleben, Kenny
part of: 18th International Meshing Roundtable (ISBN: 978-3-642-04318-5), pages: 539-556, 2009,
Springer-Verlag,
Presented at: 18th International Meshing Roundtable, Salt Lake City
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2009

Shape Analysis Using the Auto Diffusion Function

Welnicka, Katarzyna ; Bærentzen, J. Andreas ; Aanæs, Henrik ; Larsen, Rasmus
in journal: Computer Graphics Forum (ISSN: 0167-7055), vol: 28, issue: 5, pages: 1405-1413,
2009
Presented at: Symposium on Geometry Processing, Berlin
Type: Conference article (Peer reviewed)
Status: Published | Year: 2009

Height and Tilt Geometric Texture

Dahl, Vedrana Andersen ; Desbrun, Mathieu ; Bærentzen, J. Andreas ; Aanæs, Henrik
part of: Advances in Visual Computing (ISBN: 978-3-642-10330-8), pages: 656-667, 2009,
Springer,
Presented at: International Symposium on Visual Computing, Las Vegas
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2009

2008

Two Methods for Antialiased Wireframe Drawing with Hidden Line Removal

Bærentzen, J. Andreas ; Munk-Lund, Steen ; Gjørl, Mikkel ; Larsen, Bent Dalgaard
part of: Proceedings of the Spring Conference in Computer Graphics, 2008,
Presented at: Spring Conference on Computer Graphics : J. Andreas Bærentzen, Budmerice,
Slovakia
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2008

Shader-Based Wireframe Drawing

Bærentzen, J. Andreas ; Nielsen, Steen Lund ; Gjørl, Mikkel ; Larsen, Bent Dalgaard
in journal: Computer Graphics and Geometry (ISSN: 1811-8992), vol: 10, issue: 2, pages: 66-79,
2008
Type: Journal article
Status: Published | Year: 2008

Markov Random Fields on 3D Polygonal Meshes

Dahl, Vedrana Andersen ; Aanæs, Henrik ; Bærentzen, J. Andreas ; Nielsen, Mads
part of: Proceedings of the 16th Danish Conference on Pattern Recognition and Image Analysis,
pages: 16-17, 2008, University of Copenhagen, Department of Computer Science, Copenhagen
Presented at: 16th Danish Conference on Pattern Recognition and Image Analysis, Copenhagen
Type: Conference abstract in proceedings
Status: Published | Year: 2008

2007

Boneless Pose Editing and Animation

Bærentzen, J. Andreas ; Hansen, Kristian Evers ; Erleben, Kenny
part of: Scandinavian Conference on Image Analysis, 2007,
Presented at: 15th Scandinavian Conference on Image Analysis (SCIA), Aalborg
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2007

Variational Volumetric Surface Reconstruction from Points

Jakobsen, Bjarke ; Bærentzen, J. Andreas ; Christensen, Niels Jørgen
part of: IEEE/EG International Symposium on Volume Graphics, 2007,
Presented at: IEEE/EG International Symposium on Volume Graphics

Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2007

2006

3D Distance Fields: A Survey of Techniques and Applications

Jones, Mark ; Bærentzen, J. Andreas ; Sramek, Milos
in journal: Transactions on Visualization and Computer Graphics (ISSN: 1077-2626), vol: 12, issue: 4, 2006
Type: Journal article (Peer reviewed)
Status: Published | Year: 2006

Optimizing 3D Triangulations to Recapture Sharp Edges

Bærentzen, J. Andreas
Report name: Optimizing 3D Triangulations to Recapture Sharp Edges, Number: data dependent triangulation,
Type: Report (Peer reviewed)
Status: Published | Year: 2006

Single-pass Wireframe Rendering

Bærentzen, J. Andreas ; Nielsen, Steen Lund ; Gjøl, Mikkel ; Larsen, Bent Dalgaard ; Christensen, Niels Jørgen
Presented at: Siggraph Sketches
Type: Poster
Status: Published | Year: 2006

2005

From Points to Smooth Surfaces

Bærentzen, J. Andreas
part of: International Workshop on PDE Methods in Computer Graphics, 2005, University of Copenhagen, Denmark
Presented at: International Workshop on PDE Methods in Computer Graphics
Type: Article in proceedings
Status: Published | Year: 2005

Signed Distance Computation using the Angle Weighted Pseudo-normal

Bærentzen, J. Andreas ; Aanæs, Henrik
in journal: IEEE Transactions on Visualization and Computer Graphics (ISSN: 1077-2626), vol: 11, issue: 3, pages: 243-253, 2005
Type: Journal article (Peer reviewed)
Status: Published | Year: 2005

Robust Generation of Signed Distance Fields from Triangle Meshes

Bærentzen, J. Andreas (Invited author)

part of: Fourth International Workshop on Volume Graphics, 2005., pages: 167-239, 2005,

Presented at: Fourth International Workshop on Volume Graphics, 2005.

Type: Article in proceedings (Peer reviewed) | Invited contribution

Status: Published | Year: 2005

Hardware-accelerated Point Generation and Rendering of Point-based Impostors

Bærentzen, J. Andreas

in journal: Journal of Graphics Tools (ISSN: 1086-7651), vol: 10, issue: 2, pages: 1-12, 2005

Type: Journal article (Peer reviewed)

Status: Published | Year: 2005

Signed distance computation using the angle weighted pseudonormal

Bærentzen, J. Andreas ; Aanæs, Henrik

in journal: I E E Transactions on Visualization and Computer Graphics (ISSN: 1077-2626) (DOI: <http://dx.doi.org/10.1109/TVCG.2005.49>), vol: 11, issue: 3, pages: 243 - 253, 2005

Type: Journal article (Peer reviewed)

Status: Published | Year: 2005 | DOI: <http://dx.doi.org/10.1109/TVCG.2005.49>

2003

Hardware Accelerated Point Rendering of Isosurfaces

Bærentzen, J. Andreas ; Christensen, Niels Jørgen

in journal: Journal of WSCG (ISSN: 1213-6972), vol: 11, issue: 1, pages: 41-48, 2003

Presented at: 11th International Conference on Computer Graphics, Visualization and Computer Vision, Plzen

Type: Conference article (Peer reviewed)

Status: Published | Year: 2003

PDE Based Surface Estimation for Structure from Motion.

Aanæs, Henrik ; Larsen, Rasmus ; Bærentzen, J. Andreas ; Bigün et al., Josef (Editor)

part of: 13th Scandinavian Conference on Image Analysis, Gothenburg, Sweden, pages: 632-639, 2003, Springer,

Presented at: 13th Scandinavian Conference on Image Analysis (SCIA), Gothenburg

Type: Article in proceedings (Peer reviewed)

Status: Published | Year: 2003

Pseudo--Normals for Signed Distance Computation

Aanæs, Henrik ; Bærentzen, J. Andreas

part of: Vision, modeling, and visualization 2003, Munich, Germany, 2003,

Presented at: Vision, modeling, and visualization 2003, Munich, Germany

Type: Article in proceedings (Peer reviewed)

Status: Published | Year: 2003

2002

Computing discrete signed distance fields from triangle meshes

Bærentzen, J. Andreas ; Aanæs, Henrik

Report name: Computing discrete signed distance fields from triangle meshes, Number: Signed Distance Field,

Type: Report (Peer reviewed)

Status: Published | Year: 2002

Manipulation of volumetric solids with applications to sculpting

Bærentzen, J. Andreas ; Christensen, Niels Jørgen (Supervisor)

Type: Ph.D. thesis

Status: Published | Year: 2002

Generating Signed Distance Fields From Triangle Meshes

Bærentzen, J. Andreas ; Aanæs, Henrik

Publisher: Informatics and Mathematical Modelling, Report name: Generating Signed Distance Fields From Triangle Meshes, Number: ,

Type: Report (Peer reviewed)

Status: Published | Year: 2002

Using Cellular Phones to Interact with Virtual Environments

Larsen, Bent Dalgaard ; Bærentzen, J. Andreas ; Christensen, Niels Jørgen

Presented at: SIGGRAPH

Type: Poster

Status: Published | Year: 2002

Interactive Modelling of Shapes Using the Level-Set Method

Bærentzen, J. Andreas ; Christensen, Niels Jørgen

in journal: International Journal of Shaping Modeling (ISSN: 0218-6543), vol: 8, issue: 2, pages: 79-97, 2002

Type: Journal article (Peer reviewed)

Status: Published | Year: 2002

Volume Sculpting Using the Level-Set Method

Bærentzen, J. Andreas ; Christensen, Niels Jørgen

part of: International Conference on Shape Modelling and Applications (SMI) (ISBN: 0-7695-1546-0), 2002, IEEE,

Presented at: International Conference on Shape Modelling and Applications (SMI)

Type: Article in proceedings (Peer reviewed)

Status: Published | Year: 2002 | DOI: <http://dx.doi.org/10.1109/SMI.2002.1003543>

2001

A Technique for Volumetric CSG Based on Morphology

Bærentzen, J. Andreas ; Christensen, Niels Jørgen ; Müller, Klaus (Editor)

part of: Proceedings of the International Workshop on Volume Graphics 2001, pages: 71-79, 2001,

State University of New York at Stony Brook,
Presented at: International Workshop on Volume Graphics, Stony Brook, New York, USA
Type: Article in proceedings (Peer reviewed)
Status: Published | Year: 2001

Volume Sculpting: Intuitive, Interactive 3D Shape Modelling

Bærentzen, J. Andreas
Presented at: IMM Visionday
Type: Poster
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On the implementation of fast marching methods for 3D lattices

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