

Refereed Journal Articles:

1. **A. Belyaev**, B. Khesin, and S. Tabachnikov, “Discrete spherical means of directional derivatives and their applications.” *Journal of Geometry and Physics*. Accepted.
2. S. Yoshizawa, **A. Belyaev**, and H. Yokota, “Curvature extremalities for intelligent shape and image interrogation.” *Journal for Geometry and Graphics*, 15, 2011.
3. W. Saleem, **A. Belyaev**, D. Wang, and H.-P. Seidel, “On visual complexity of 3D shapes.” *Computers & Graphics*, 35, pp. 580-585, 2011.
4. J. Kerber, A. Tevs, **A. Belyaev**, R. Zayer and H.-P. Seidel, “Real-time generation of digital bas-reliefs” *Computer-Aided Design and Applications*, 7(4), pp. 465-478, 2010.
5. S. Yoshizawa, **A. G. Belyaev**, and H. Yokota, “Fast Gauss bilateral filtering.” *Computer Graphics Forum*, 29(1), pp. 60-74, 2010.
6. S. Yoshizawa, **A. G. Belyaev**, H. Yokota, and H.-P. Seidel, “Fast, robust, and faithful methods for detecting crest lines on meshes.” *Computer Aided Geometric Design*, 25(8), pp. 545-560, 2008.
7. I. Galić, J. Weickert, M. Welk, A. Bruhn, **A. G. Belyaev**, and H.-P. Seidel, “Image Compression with Anisotropic Diffusion.” *Journal of Mathematical Imaging and Vision*, 31(2-3), July 2008, pp. 255-269.
8. O. Schall, **A. G. Belyaev**, and H.-P. Seidel, “Adaptive Feature-preserving Non-local Denoising of Static and Time-varying Range Data.” *Computer-Aided Design*, 40(6), June 2008, pp. 701-707.
9. S. Yoshizawa, **A. G. Belyaev**, and H.-P. Seidel, “Skeleton-based variational mesh deformations.” *Computer Graphics Forum* (Proc. Eurographics 2007), 26(3), September 2007, pp. 255-264.
10. W. Saleem, O. Schall, G. Patanè, **A. G. Belyaev**, and H.-P. Seidel, “On stochastic methods for surface reconstruction.” *The Visual Computer*, 23(6), 2007, pp. 381–395. **AIM@SHAPE Best Paper Award for 2006.**
11. O. Schall, **A. G. Belyaev**, and H.-P. Seidel, “Error-guided adaptive Fourier-based surface reconstruction.” *Computer-Aided Design*, Vol. 39, No. 5, May 2007, pp. 421-426.
12. T. Langer, **A. G. Belyaev**, and H.-P. Seidel, “Exact and interpolatory quadratures for curvature tensor estimation.” *Computer Aided Geometric Design*, 24(8-9), November-December 2007, pp. 443–463.
13. Yu. Ohtake, **A. G. Belyaev**, and H.-P. Seidel, “A Composite Approach to Meshing Scattered Data.” *Graphical Models*, 68(3), 2006, pp. 255–267.
14. Yu. Ohtake, **A. G. Belyaev**, and H.-P. Seidel, “Sparse surface reconstruction with adaptive partition of unity and radial basis functions.” *Graphical Models*, 68(1), 2006, pp. 15-24.
15. S. Yoshizawa, **A. G. Belyaev**, and H.-P. Seidel, “A moving mesh approach to stretch-minimizing mesh parameterization.” *International Journal for Shape Modeling*, 11(1), 2005, pp. 25–42.
16. Yu. Ohtake, **A. G. Belyaev**, and H.-P. Seidel, “3D Scattered Data Interpolation and Approximation with Multilevel Compactly Supported RBFs.” *Graphical Models*, 67(3), 2005, pp. 150-165.
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17. Yu. Ohtake, **A. G. Belyaev**, and H.-P. Seidel, “Ridge-valley lines on meshes via implicit surface fitting.” *ACM Transactions on Graphics* (Proc. ACM SIGGRAPH 2004), 23(3), 2004, pp. 609–612.
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18. Yu. Otake, **A. G. Belyaev**, M. Alexa, G. Turk, and H.-P. Seidel, “Multi-level Partition of Unity Implicit.” *ACM Transactions on Graphics* (Proc. ACM SIGGRAPH 2003), 22(3), 2003, pp. 463–470.
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19. Yu. Otake, **A. G. Belyaev**, and A. Pasko, ”Dynamic Mesh Optimization for Polygonized Implicit Surfaces with Sharp Features.” *The Visual Computer*. Vol. 19, No. 2-3, May 2003, pp. 115-126.
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22. M. Hisada, **A. G. Belyaev**, and T. L. Kunii “A Skeleton-based Approach for Detection of Perceptually Salient Features on Polygonal Surfaces.” *Computer Graphics Forum*, Vol. 21, No. 4, 2002, pp. 1–12.
23. M. Hisada, **A. G. Belyaev** and T. L. Kunii, “Towards a Singularity-based Shape Language: Ridges, Ravines, and Skeletons for Polygonal Surfaces.” *Soft Computing*, Vol. 7, No. 1, November 2002, pp. 45–52.
24. Yu. Otake and **A. G. Belyaev**, ”Generating interpolatory subdivision curves via averaging normals.” *The Journal of Three Dimensional Images*, Vol. 15, No. 4, December 2001, pp. 125–130.
25. **A. G. Belyaev**, A. L. Piatnitski, and G. A. Chechkin, ”Homogenization of a second-order elliptic operator in a perforated domain with oscillating Fourier boundary conditions.” *Sbornik: Mathematics*, Vol. 192, No. 7, 2001, pp. 3–20.
26. Yu. Otake and **A. G. Belyaev**, “Mesh optimization for polygonized isosurfaces.” *Computer Graphics Forum* (Proc. Eurographics 2001), Vol. 20, No. 3, 2001, pp. 368–376.
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[110+ citations at Google Scholar.](#)
28. Yu. Otake, **A. G. Belyaev**, and I. A. Bogaevski, “Mesh Regularization and Adaptive Smoothing.” *Computer-Aided Design*, Vol. 33, No. 11, 2001, pp. 789–800.
29. **A. G. Belyaev**, G. A. Chechkin, and R. R. Gadyl’shin, “Effective membrane permeability: Estimates and low concentration asymptotics.” *SIAM Journal on Applied Mathematics*, 1999, Vol. 60, No. 1, pp. 84–108.
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31. Yu. Otake, **A. G. Belyaev**, and I. A. Bogaevski, “Polyhedral surface smoothing with modified Laplacian and curvature flows.” *The Journal of Three Dimensional Images*, 1999, Vol. 13, No. 3, pp. 19–24.
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35. **A. G. Belyaev**, "Asymptotics of solutions of boundary value problems in periodically perforated domains with small holes," *Journal of Mathematical Sciences*, 1995, Vol. 75, No. 3, pp. 1715–1749.
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38. **A. G. Belyaev**, A. G. Mikheev, and A. S. Shamaev, "Diffraction of a plane wave by a rapidly oscillating surface," *Computational Mathematics and Mathematical Physics*, 1992, Vol. 32, No. 8, pp. 1121–1133.
39. **A. G. Belyaev**, "A boundary value problem for the Poisson equation in a perforated domain with small inclusions," *Moscow University Mathematics Bulletin*, 1991, Vol. 46, No. 6, pp. 29–33.
40. **A. G. Belyaev**, "Homogenization of a third boundary value problem for the Poisson equation in a domain with rapidly oscillating boundary," *Vestnik Moskovskogo Universiteta*, 1988, Ser. Mat., No. 6, pp. 63–66. (In Russian.)

Refereed Conference papers:

41. **A. Belyaev** and H. Yamauchi, "Implicit filtering for image and shape processing." Vision, Modeling and Visualization (VMV 2011), Berlin, Germany, October 2011. Accepted.
42. **A. Belyaev**, "On implicit image derivatives and their applications." British Machine Vision Conference (BMVC 2011), Dundee, Scotland, UK, August-September 2011. Accepted.
43. J. Kerber, A. Tevs, **A. Belyaev**, R. Zayer, and H.-P. Seidel, "Feature Sensitive Bas Relief Generation." *IEEE International Conference on Shape Modeling and Applications (Shape Modeling International 2009)*, Tsinghua University, Beijing, China, June 2009, pp. 148–154.
44. T. Langer, **A. Belyaev**, and H.-P. Seidel, "Mean Value Bézier Maps." *Geometric Modeling and Processing (GMP 2008)*, Hangzhou, China, April 2008. Springer Lecture Notes in Computer Science (LNCS), Vol. 4975, 2008, pp. 231–243. **The Best Paper Award**.
45. S. Yoshizawa, **A. Belyaev**, H. Yokota, and H.-P. Seidel, "Fast and faithful geometric algorithm for detecting crest lines on meshes." *The 15th Pacific Conference on Computer Graphics and Applications (Pacific Graphics 2007)*, Maui, Hawaii, October-November 2007, pp. 231–237.
46. O. Schall, **A. Belyaev**, and H.-P. Seidel, "Feature-preserving non-local denoising of static and time-varying range data." *12th ACM Symposium on Solid and Physical Modeling (SPM 2007)*, Tsinghua University, Beijing, China, June 2007, pp. 217–222. **The Best Paper Award**.
47. W. Saleem, D. Wang, **A. Belyaev**, and H.-P. Seidel, "Automatic 2D Shape Orientation by Example." *IEEE International Conference on Shape Modeling and Applications (Shape Modeling International 2007)*, Lyon, France, June 2007, pp. 221–225.
48. W. Song, **A. Belyaev**, and H.-P. Seidel, "Automatic generation of bas-reliefs from 3D shapes." *International Conference on Shape Modeling and Applications (Shape Modeling International 2007)*, Lyon, France, June 2007, pp. 211–214.
49. J. Kerber, **A. Belyaev**, and H.-P. Seidel, "Feature Preserving Depth Compression of Range Images." *Proceedings of the 23rd Spring Conference on Computer Graphics (SCCG 2007)*, Budmerice, Slovakia, April 2007, pp. 110–114.
The 2nd Best SCCG 2007 Paper Award.

50. W. Saleem, W. Song, **A. Belyaev**, and H.-P. Seidel, “On Computing Best Fly.” *Proceedings of the 23rd Spring Conference on Computer Graphics (SCCG 2007)*, Budmerice, Slovakia, April 2007, pp. 143–149.
51. O. Schall, **A. Belyaev**, and H.-P. Seidel, “Adaptive Fourier-based surface reconstruction.” *Geometric Modeling and Processing (GMP 2006)*, Pittsburgh, Pennsylvania, USA, July 2006. Springer Lecture Notes in Computer Science (LNCS), Vol. 4077, pp. 34–44.
52. H. Yamauchi, W. Saleem, S. Yoshizawa, Z. Karni, **A. Belyaev**, and H.-P. Seidel, “Towards salient and stable multi-view representation of 3D shapes.” *International Conference on Shape Modeling and Applications (Shape Modeling International 2006)*, Sendai, Japan, June 2006, pp. 265–270.
53. **A. Belyaev**, “On transfinite barycentric coordinates.” *4th Eurographics Symposium on Geometry Processing (SGP 2006)*, Sardinia, Italy, June 2006, pp. 89–99.
54. T. Langer, **A. Belyaev**, and H.-P. Seidel, “Spherical barycentric coordinates.” *4th Eurographics Symposium on Geometry Processing (SGP 2006)*, Sardinia, Italy, June 2006, pp. 81–88.
55. S. Yoshizawa, **A. G. Belyaev**, and H.-P. Seidel, “Smoothing by example: mesh denoising by averaging with similarity-based weights.” *IEEE International Conference on Shape Modeling and Applications (Shape Modeling International 2006)*, Matsushima, Japan, June 2006, pp. 38–44.
56. T. Langer, **A. G. Belyaev**, and H.-P. Seidel, “Exact and approximate quadratures for curvature tensor estimation.” *Vision, Modeling, and Visualization (VMV 2005)*, Erlangen, Germany, November 2005, pp. 421–428.
57. I. Galić, J. Weickert, M. Welk, A. Bruhn, **A. G. Belyaev**, and H.-P. Seidel, “Towards PDE-based image compression.” *3rd International Workshop on Variational, Geometric and Level Set Methods in Computer Vision*, Beijing, China, October 2005. Springer Lecture Notes in Computer Science (LNCS), Vol. 3752, pp. 37–48.
58. **A. G. Belyaev** and E. V. Anoshkina, “Detection of surface creases in range data.” *Mathematics of Surfaces XI: 11th IMA International Conference*, Loughborough, UK, September 2005. Springer Lecture Notes in Computer Science (LNCS), Vol. 3604, pp. 50–61.
59. Yu. Ohtake, **A. G. Belyaev**, and M. Alexa, “Sparse low-degree implicit surfaces with applications to high-quality rendering, feature extraction, and smoothing.” *3rd Eurographics Symposium on Geometry Processing (SGP 2005)*, Vienna, Austria, July 2005, pp. 149–158.
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61. O. Schall, **A. G. Belyaev**, and H.-P. Seidel, “Robust filtering of noisy scattered point data.” *Eurographics Symposium on Point-Based Graphics (PBG 2005)*, Stony Brook, NY, USA, June 2005, pp. 71–77.
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63. Yu. Ohtake, **A. G. Belyaev**, and H.-P. Seidel, “An Integrating Approach to Meshing Scattered Point Data.” *ACM Symposium on Solid and Physical Modeling (SPM 2005)*, MIT, Cambridge, MA, USA, June 2005, pp. 61–69.
64. T. Langer, **A. G. Belyaev**, and H.-P. Seidel, “Asymptotic Analysis of Discrete Normals and Curvatures of Polyline.” *Spring Conference on Computer Graphics (SCCG 2005)*, Budmerice, Slovakia, May 2005, pp. 229–232.
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83. S. Yoshizawa and **A. G. Belyaev**, “Visualization and study of dynamic 2D shapes via curvature.” *International Conference on Multimedia Modeling (MMM 2000)*, Nagano, Japan, November 2000, pp. 469–489.
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87. **A. G. Belyaev**, A. A. Pasko, and T. L. Kunii, “Ridges and ravines on implicit surfaces.” *Computer Graphics International (CGI'98)*, Hannover, Germany, June 1998, pp. 530–535.
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92. S. Hahmann, **A. Belyaev**, L. Busé, G. Elber, B. Mourrain and C. Rössl, “Shape Interrogation.” *Shape Analysis and Structuring*, L. De Floriani and M. Spagnuolo (Eds.), Springer, 2008, pp. 1–51.
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95. **A. G. Belyaev**, E. V. Anoshkina, and T. L. Kunii, “Ridges, Ravines and Singularities.” Chapter 18 in A. T. Fomenko and T. L. Kunii, *Topological Modeling for Visualization*, Springer, 1997, pp. 375–383.
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99. **A. G. Belyaev** and Yu. Ohtake, “Nonlinear Diffusion of Normals for Crease Enhancement.” *Vision Geometry X*, SPIE 4476, San Diego, July-August 2001, pp. 42–47.
100. Yu. Ohtake and **A. G. Belyaev**, “Nonlinear diffusion of normals for stable detection of ridges and ravines on range images and polygonal models.” *IAPR Workshop on Machine Vision Applications (MVA 2000)*, Tokyo, November 2000, pp. 497–500.
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102. **A. G. Belyaev**, “A note on invariant three-point curvature approximations.” *Surikaisekikenkyusho Kokyuroku* (RIMS, Kyoto), No. 1111, pp. 157–164, August 1999.
103. **A. G. Belyaev**, I. A. Bogaevski, and T. L. Kunii, “Ridges and ravines on a surface and segmentation of range images.” *Vision Geometry VI*, SPIE 3168, San-Diego, July 1997, pp. 106–114. Published also in the Selected SPIE Papers on CD-ROM series, Vol 8: Mathematical Imaging and Vision, G. X. Ritter, Editor, SPIE 1999.
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