Curriculum Vitae

Personal Data

Name	Kai Hormann
Office Address	Faculty of Informatics University of Lugano Via Giuseppe Buffi 13 6904 Lugano Switzerland
Phone	+41.58.666.4327
E-Mail	kai.hormann@usi.ch
Web	www.inf.usi.ch/hormann

Education

02/2002	**Ph.D. in Computer Science** from the Faculty of Engineering at the University of Erlangen-Nürnberg, **Germany**, Dissertation on *Theory and Applications of Parameterizing Triangulations* (supervised by Prof. Dr. G. Greiner)
07/1997	**Diploma in Mathematics** from the Faculty of Natural Sciences I at the University of Erlangen-Nürnberg, **Germany**, Diploma Thesis on *Smooth Approximation with Hierarchical Spline Surfaces* (supervised by Prof. Dr. H. Strauß and Prof. Dr. G. Greiner)
10/1992 – 07/1997	**Studies of Mathematics** with a minor in Computer Science at the University of Erlangen-Nürnberg, **Germany**
05/1992	**Abitur** (high-school degree) at the Leibniz-Gymnasium in Bad Schwartau, **Germany**

Academic Career

since 09/2014	**Full Professor** at the Faculty of Informatics at Università della Svizzera italiana in Lugano, **Switzerland**
01/2018 – 08/2018	**Visiting Professor** at the School of Computer Science and Engineering at Nanyang Technological University, **Singapore**
09/2015 – 08/2017	**Dean** of the Faculty of Informatics at Università della Svizzera italiana in Lugano, **Switzerland**
06/2012	**Visiting Professor** at the Department of Mathematics and Informatics at the University of Cagliari, **Italy**
09/2009 – 08/2013	**Associate Professor** at the Faculty of Informatics at Università della Svizzera italiana in Lugano, **Switzerland**
11/2007 – 03/2008	**Visiting BMS Professor** at the Department of Mathematics and Computer Science at Freie Universität Berlin, **Germany**
09/2007	Successful **mid term evaluation** of the Assistant Professorship
09/2004 – 08/2009	**Assistant Professor** at the Department of Informatics at Clausthal University of Technology, **Germany**
06/2003 – 08/2004	**Post-doctoral Research Fellow** at the Institute of Information Science and Technologies at the Consiglio Nazionale delle Ricerche (CNR) in Pisa, **Italy**
06/2002 – 05/2003	**Post-doctoral Research Fellow** at the Department of Computer Science at the California Institute of Technology (Caltech) in Pasadena, **USA**
09/2000 – 02/2001	**Research Fellow** of the EU research project *Multiresolution in Geometric Modelling* at the Department of Geometric Modelling at the research institute SINTEF in Oslo, **Norway**
07/1998 – 05/2002	**Research Assistant** at the Department of Computer Science 9 (Computer Graphics) at the University of Erlangen-Nürnberg, **Germany**

Research Grants

09/2020 – 08/2024 **SNF** — Research Project on *Barycentric Interpolation*, solely responsible for application and implementation of the project
Grant value: **864,000 CHF**

12/2019 – 11/2023 **EU** — Horizon 2020 Innovative Training Network (ITN) on *learninG, pRocessing, And oPtimising shapES (GRAPES)*, solely responsible for application and implementation of the sub-project *Barycentric rational curves and surfaces*
Grant value: **281,277 €**

02/2014 – 04/2017 **SNF** — Research Project on *Generalized Barycentric Interpolation*, solely responsible for application and implementation of the project
Grant value: **161,900 CHF**

05/2013 – 04/2014 **SNF** — Research Project on *Dynamic Mesh Compression*, solely responsible or application and implementation of the project
Grant value: **91,350 CHF**

09/2012 – 09/2016 **SNF** — Research Project on *Geometry-Aware FEM in Computational Mechanics*, jointly responsible (with Rolf Krause) for application and implementation of the project
Grant value: **441,053 CHF**

05/2010 – 04/2013 **DFG + SNF** — Research Project on *Interactive Modelling of Dynamic 3D Surfaces*, solely responsible for application and implementation of the project
Grant value: **65,000 € + 187,550 CHF**

01/2006 – 09/2009 **VolkswagenStiftung** — Research Cooperation with the Computer Science Department at the Israel Institute of Technology (Technion) in Haifa, Israel for a project on *Free-Viewpoint Video using Depth Cameras*, jointly responsible (with Craig Gotsman) for application, coordination, and implementation of the project
Grant value: **225,000 €**

06/2002 – 05/2004 **DFG** — Post-doctoral Research Fellowship for a project on *A Volumetric Approach to Surface Reconstruction*, solely responsible for application and implementation of the project
Grant value: **75,000 €**

01/1998 – 12/2006 **DFG** — Project A2 *Reconstruction of Smooth Surfaces from Discrete Data* of the Collaborative Research Centre 603 *Model-Based Analysis and Visualization of Complex Scenes and Sensor Data*, responsible for the sequel application in 2000 and the reports in 2000 and 2003
Grant value: **585,000 €**

Professional Activities

Editorial boards of scientific journals

since 10/2019 IEEE Transactions on Visualization and Computer Graphics
since 01/2015 Computers & Graphics
since 01/2012 Dolomites Research Notes on Approximation
04/2010 – 03/2013 Computer Graphics Forum
since 11/2009 Computer Aided Geometric Design

Chairman

since 05/2017 Steering Committee of Geometric Modeling and Processing
01/2017 – 12/2018 SIAM Activity Group on Geometric Design

Organization of conferences and workshops (last 5 years)

06/2019 Conference Co-Chair of the SIAM Conference on *Computational Geometric Design* in Vancouver, **Canada**
05/2019 Programme Co-Chair of *Eurographics Doctoral Consortium* in Genova, **Italy**
07/2017 Organizer of the Minisymposium *New Trends in Generalized Barycentric Coordinates* at the SIAM Conference on Industrial and Applied Geometry in Pittsburgh, **USA**
06/2015 Conference Co-Chair of the 9th International Conference on *Geometric Modeling and Processing* in Lugano, **Switzerland**

Publication List (last 5 years)

[1] E. Cirillo, K. Hormann, and J. Sidon. Convergence rates of a Hermite generalization of Floater–Hormann interpolants. *Journal of Computational and Applied Mathematics*, 371:Article 112624, 9 pages, June 2020.

[2] K. Hormann and J. Zheng. Algebraic and geometric characterizations of a class of planar quartic curves with rational offsets. *Computer Aided Geometric Design*, 79:Article 101873, 15 pages, May 2020.

[3] C. Deng, Q. Chang, and K. Hormann. Iterative coordinates. *Computer Aided Geometric Design*, 79:Article 101861, 13 pages, May 2020. Proceedings of GMP.

[4] E. L. Foster, K. Hormann, and R. T. Popa. Clipping simple polygons with degenerate intersections. *Computers & Graphics: X*, 2:Article 100007, 10 pages, December 2019.

[5] Z. Ye, Y.-J. Liu, J. Zheng, K. Hormann, and Y. He. DE-Path: A differential-evolution-based method for computing energy-minimizing paths on surfaces. *Computer-Aided Design*, 114:73–81, September 2019.

[6] D. Anisimov, K. Hormann, and T. Schneider. Behaviour of exponential three-point coordinates at the vertices of convex polygons. *Journal of Computational and Applied Mathematics*, 350:114–129, April 2019.

[7] E. Cirillo and K. Hormann. On the Lebesgue constant of barycentric rational Hermite interpolants at equidistant nodes. *Journal of Computational and Applied Mathematics*, 349:292–301, March 2019.

[8] E. Cirillo and K. Hormann. An iterative approach to barycentric rational Hermite interpolation. *Numerische Mathematik*, 140(4):939–962, December 2018.

[9] R. Chen, C. Gotsman, and K. Hormann. Path planning with divergence-based distance functions. *Computer Aided Geometric Design*, 66:52–74, November 2018.

[10] R. Chen, C. Gotsman, and K. Hormann. Efficient path generation with reduced coordinates. *Computer Graphics Forum*, 37(5):37–48, August 2018. Proceedings of SGP.

[11] C. Conti, C. Deng, and K. Hormann. Symmetric four-directional bivariate pseudo-spline symbols. *Computer Aided Geometric Design*, 60:10–17, February 2018.

[12] F. Dell'Accio, F. Di Tommaso, and K. Hormann. Reconstruction of a function from Hermite–Birkhoff data. *Applied Mathematics and Computation*, 318:51–69, February 2018.

[13] K. Hormann and N. Sukumar, editors. *Generalized Barycentric Coordinates in Computer Graphics and Computational Mechanics*. CRC Press, 2017.

[14] P. Zulian, T. Schneider, K. Hormann, and R. Krause. Parametric finite elements with bijective mappings. *BIT Numerical Mathematics*, 57(4):1185–1203, December 2017.

[15] E. Cirillo, K. Hormann, and J. Sidon. Convergence rates of derivatives of Floater–Hormann interpolants for well-spaced nodes. *Applied Numerical Mathematics*, 116:108–118, June 2017.

[16] D. Anisimov, D. Panozzo, and K. Hormann. Blended barycentric coordinates. *Computer Aided Geometric Design*, 52–53:205–216, March–April 2017. Proceedings of GMP.

[17] K. Hormann and J. Kosinka. Discretizing Wachspress kernels is safe. *Computer Aided Geometric Design*, 52–53:126–134, March–April 2017. Proceedings of GMP.

[18] F. Dell'Accio, F. Di Tommaso, and K. Hormann. Multinode rational operators for univariate interpolation. In *Numerical Computations: Theory and Algorithms (NUMTA–2016)*, volume 1776 of *AIP Conference Proceedings*, pages 070010:1–4, Pizzo Calabro, June 2016. AIP Publishing.

[19] F. Dell'Accio, F. Di Tommaso, and K. Hormann. On the enhancement of the approximation order of triangular Shepard method. In *Numerical Computations: Theory and Algorithms (NUMTA–2016)*, volume 1776 of *AIP Conference Proceedings*, pages 070009:1–4, Pizzo Calabro, June 2016. AIP Publishing.

[20] R. Schärfig, M. Stamminger, and K. Hormann. Creating light atlases with multi-bounce indirect illumination. *Computers & Graphics*, 55:97–107, April 2016.

[21] D. Anisimov, C. Deng, and K. Hormann. Subdividing barycentric coordinates. *Computer Aided Geometric Design*, 43:172–185, March 2016. Proceedings of GMP.

[22] K. Hormann and S. Schaefer. Pyramid algorithms for barycentric rational interpolation. *Computer Aided Geometric Design*, 42:1–6, February 2016. Short communication.

[23] F. Dell'Accio, F. Di Tommaso, and K. Hormann. On the approximation order of triangular Shepard interpolation. *IMA Journal of Numerical Analysis*, 36(1):359–379, January 2016.

[24] K. Hormann. Geometry processing. In B. Engquist, editor, *Encyclopedia of Applied and Computational Mathematics*, pages 593–606. Springer, Berlin, Heidelberg, 2015.

[25] N. Dyn, A. Heard, K. Hormann, and N. Sharon. Univariate subdivision schemes for noisy data with geometric applications. *Computer Aided Geometric Design*, 37:85–104, August 2015.

[26] T. Schneider and K. Hormann. Smooth bijective maps between arbitrary planar polygons. *Computer Aided Geometric Design*, 35–36:243–354, May 2015. Proceedings of GMP.

[27] S. Marras, L. Váša, G. Brunnett, and K. Hormann. Perception-driven adaptive compression of static triangle meshes. *Computer-Aided Design*, 58:24–33, January 2015. Proceedings of SPM.