

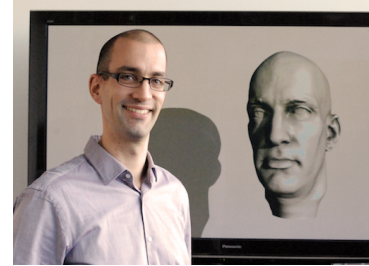
# PROF. DR. MARIO BOTSCH

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## PERSONAL INFORMATION

1974 born in Bremen, Germany  
Nationality German  
Marital status married, one daughter  
Languages German, English

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## EDUCATION

2005 PhD in Computer Science (Dr. rer. nat., summa cum laude)  
*RWTH Aachen*  
1999 MSc in Mathematics (Dipl. Math., summa cum laude)  
*University of Erlangen-Nürnberg*

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## ACADEMIC POSITIONS

Spring 2017 Visiting Professor  
*Visual Computing Institute, ETH Zurich*  
since 2008 Professor for Computer Graphics & Geometry Processing  
*Faculty of Technology, Bielefeld University*  
2005–2008 Lecturer & Senior Researcher  
*Computer Graphics Laboratory, ETH Zürich*  
2001–2005 Research assistant & PhD student  
*Computer Graphics Group, RWTH Aachen*  
1999–2000 Research assistant & PhD student  
*Computer Graphics Group, Max-Planck-Institute for Computer Science, Saarbrücken*

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## AWARDS

- 2019 Teaching award “Continuously Excellent Teaching” for summer term 2019  
*Faculty of Technology, Bielefeld University*
- DIVR Best Impact Award for project ViTraS  
*Deutsches Institut für Virtual Reality*
- Teaching award “Golden Chalk” for winter term 2018/2019  
*Faculty of Technology, Bielefeld University*
- 2018 Best Journal Paper Award  
*IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR)*
- Teaching award “Silver Chalk” for summer term 2018  
*Faculty of Technology, Bielefeld University*
- Teaching award “Golden Chalk” for winter term 2017/2018  
*Faculty of Technology, Bielefeld University*
- 2017 Teaching award “Silver Chalk” for winter term 2016/2017  
*Faculty of Technology, Bielefeld University*
- 2016 Runner-Up for Best Student Paper Award  
*IEEE Congress on Evolutionary Computation*
- 2015 Best Paper Award  
*Eurographics Symposium on Geometry Processing*
- 2014 Best Paper Award  
*International Meshing Roundtable*
- Teaching award “Silver Chalk” for winter term 2013/2014  
*Faculty of Technology, Bielefeld University*
- 2013 Eurographics Medical Prize (third place) for the CITmed project  
*Eurographics*
- Teaching award “Golden Chalk” for winter term 2012/13  
*Faculty of Technology, Bielefeld University*
- 2012 Teaching award “Golden Chalk” for summer term 2012  
*Faculty of Technology, Bielefeld University*
- 2011 Teaching award “Golden Chalk” for summer term 2011  
*Faculty of Technology, Bielefeld University*
- Teaching award “Silver Chalk” for winter term 2010/2011  
*Faculty of Technology, Bielefeld University*
- 2010 Teaching award “Golden Chalk” for winter term 2009/2010  
*Faculty of Technology, Bielefeld University*
- 2008 Best Student Paper Award  
*Eurographics Symposium on Geometry Processing*
- Best Paper Award  
*Graphics Hardware*

- 2007 Eurographics Young Researcher Award  
*Eurographics Association*  
Best Course Notes Award  
*ACM SIGGRAPH*
- 2006 Best Paper Award  
*Eurographics Symposium on Geometry Processing*  
Borchers Medal for PhD thesis  
*RWTH Aachen*  
Nomination for Dissertation Award of Gesellschaft für Informatik  
*CS department of RWTH Aachen*
- 2004 Best Paper Award  
*Journal of Computers & Graphics*

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## PROJECTS & FUNDING

- 2020–2023 “VIA-VR: Technology Platform for VR Adventures in Medical Therapy”  
*Project coordinated by Würzburg University, funded by the Federal Ministry of Education and Research (BMBF)*  
PI, total budget € 2.1 M, own share € 322 k.
- 2019–2022 “ViTraS: Virtual Reality Therapy by Stimulation of Modulated Body Image”  
*Project coordinated by Würzburg University, funded by the Federal Ministry of Education and Research (BMBF)*  
PI, total budget € 2.5 M, own share € 415 k.
- 2019–2022 “Sparse Geometry Representations for Design Understanding and Cooperative Manipulation”  
*Industry cooperation with Honda Research Institute Europe, Germany*  
Sole PI, budget € 268 k.
- 2013–2018 “ICSPACE: Intelligent Coaching Space”  
*Large-scale project within Bielefeld’s excellence cluster CITEC (DFG EXC 277)*  
Project coordinator (with S. Kopp and T. Schack), budget € 1.6 M.
- 2015–2017 “KogniHome – The Smart Apartment”  
*Innovation Cluster, funded by the Federal Ministry of Education and Research (BMBF)*  
PI, total budget € 11.3 M, own share € 222 k.
- 2014–2017 “Optimality of Adaptive Representations for Dynamic Evolutionary Optimization”  
*Industry cooperation with Honda Research Institute Europe, Germany*  
Sole PI, budget € 262 k.
- 2013 “Immersive Virtuelle Experimentier-Umgebung (CAVE)”  
*Major Installation (HBFG Großgerät), State NRW, Germany*  
Coordinator, budget € 300 k.

- 2013 “Non-Rigid Registration of Shoelast”  
*Industry project with Adidas GmbH, Germany*  
Sole PI, budget € 30 k.
- 2012 “Mesh Optimization for Numerical Simulation”  
*Industry cooperation with ABB Group, Switzerland*  
Sole PI, budget € 16 k.
- 2011–2014 “Constrained Deformation for Evolutionary Optimization”  
*Industry cooperation with Honda Research Institute Europe, Germany*  
Sole PI, budget € 231 k.
- 2010–2013 “Realtime Acquisition and Dynamic Modeling of Human Faces, Upper-Bodies, and Hands”  
*Research grant of German Research Foundation (DFG)*  
Sole PI, budget € 202 k.
- 2009–2012 “CITmed: Cognitive Interaction Technology for Medical Applications”  
*Research grant, program HighTech.NRW from State NRW, Germany*  
Project coordinator, budget € 1.7 M.
- 2009–2010 “Realtime Geometry Acquisition and Reconstruction”  
*Industry cooperation with confidential company*  
Sole PI, budget € 36 k.
- 2007–2008 “Physically-Based Modeling and Hardware Architectures for Point-Based Graphics”  
*Research grant from Swiss National Science Foundation (SNF)*  
PI, budget CHF 177 k.
- 2007 “Point-based Representations for 3D Picture and Video Processing”  
*Industry cooperation with Samsung, Korea*  
PI, budget \$ 61 k.

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## ACADEMIC SERVICE ACTIVITIES

### EDITORIAL BOARD MEMBERSHIPS

- 2015–2019 IEEE Transactions on Visualization and Computer Graphics  
2016–2018 Computer-Aided Design  
2015–2018 Graphical Models  
2013–2016 Computer Graphics Forum  
2010–2015 Computer & Graphics

### CONFERENCE ORGANIZATION

- 2017 Program co-chair, *Symposium on Solid and Physical Modeling*  
Conference co-chair, *International Workshop on Virtual Social Interaction*

- 2016 Conference co-chair, *GI Workshop Virtual and Augmented Reality*  
Program co-chair, *Symposium on Solid and Physical Modeling*
- 2015 Program co-chair, *Geometric Modeling & Processing*
- 2011 Program co-chair, *Eurographics Symposium on Geometry Processing*
- 2008 Conference co-chair, *Eurographics Symposium on Point-Based Graphics*
- 2007 Program co-chair, *Eurographics Symposium on Point-Based Graphics*
- 2006 Program co-chair, *Eurographics Symposium on Point-Based Graphics*

#### PROGRAM COMMITTEE MEMBERSHIPS

- ACM SIGGRAPH (2009, 2010, 2013, 2014)
- ACM SIGGRAPH Asia (2011, 2012, 2015, 2016, 2019, 2020)
- Eurographics (2007, 2008, 2010, 2012, 2013, 2015, 2016, 2018, 2020)
- Eurographics Symp. on Geometry Processing (2007–2010, 2012–2020)
- Eurographics Symp. on Point-Based Graphics (2005)
- Geometric Modeling and Processing (2014, 2018, 2019, 2020)
- SIAM/ACM Geometric and Physical Modeling (2011)
- ACM Symp. on Solid and Physical Modeling (2005, 2006, 2018)
- Pacific Graphics (2006, 2007, 2009, 2010)
- Shape Modeling International (2007–2009, 2011, 2012, 2016, 2017, 2018)
- Vision, Modeling, and Visualization (2006–2009, 2012–2019)
- Symp. on 3D Data Processing, Visualization, and Transmission (2008)
- Jahrestagung Deutsche Gesellschaft Med. Physik (2008)

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#### SERVICE ACTIVITIES AT BIELEFELD UNIVERSITY

- since 2019 Vice Dean, Faculty of Technology
- since 2018 Senate of Bielefeld University
- since 2016 Teaching Commission, Faculty of Technology
- since 2010 Faculty Conference, Faculty of Technology
- 2016–2018 Equal Opportunities Commission, Faculty of Technology
- 2013–2015 **Dean, Faculty of Technology**
- 2010–2013 Vice Dean, Faculty of Technology
- 2010–2013 Senate of Bielefeld University
- 2009–2011 Teaching Commission, Faculty of Technology
- 2009–2015 Head of Admission Committee for Bachelor programm *Media Informatics*

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## PUBLICATIONS

This section list different kinds of publications, such as journal articles, conference papers, books and book chapters, or course notes. For most of these publications, pre-prints, supplementary materials, or videos can be accessed at <http://graphics.uni-bielefeld.de/publications/>. My Google Scholar profile can be found [here](#), my ORCID profile [here](#).

### PEER-REVIEWED CONFERENCE & JOURNAL PUBLICATIONS

- [1] Astrid Bunge, Philipp Herholz, Misha Kazhdan, Mario Botsch: *Polygon Laplacian Made Simple*, Computer Graphics Forum 39(2), (Proc. Eurographics), 2020, to appear.
- [2] Lorenz Dehn, Martina Piefke, Max Toepper, Agnes Kohsik, Andreas Rogalewski, Eugen Dyck, Mario Botsch, Wolf-Rüdiger Schäbitz: *Cognitive training in an everyday-like virtual reality enhances visual-spatial memory capacities in stroke survivors with visual field defects*, Topics in Stroke Rehabilitation, 2020, to appear.
- [3] Martin Komaritzan, Mario Botsch: *Fast Projective Skinning*, Proc. of ACM Motion, Interaction and Games, 2019, pp. 22:1–22:10.
- [4] Sebastian von Mammen, Andreas Müller, Marc Erich Latoschik, Mario Botsch, Kirstin Brukamp, Carsten Schröder and Michel Wacker: *VIA VR: A Technology Platform for Virtual Adventures for Healthcare and Well-Being*, Proc. of VS-Games 2019.
- [5] Felix Hülsmann, Cornelia Frank, Irene Senna, Marc Ernst, Thomas Schack, Mario Botsch: *Superimposed skilled performance in a virtual mirror improves motor performance and cognitive representation of a full-body motor action*, Frontiers in Robotics and AI, 6(43), 2019.
- [6] Teseo Schneider, Jeremie Dumas, Xifeng Gao, Mario Botsch, Daniele Panozzo, Denis Zorin: *Poly-Spline Finite Element Method*, **ACM Transactions on Graphics** 38(3), 2019, pp. 19:1–19:16.
- [7] Marc Erich Latoschik, Florian Kern, Jan-Philipp Stauffert, Andrea Bartl, Mario Botsch, Jean-Luc Lugin: *Not Alone Here?! Scalability and User Experience of Embodied Ambient Crowds in Distributed Social Virtual Reality*, IEEE Transactions on Visualization and Computer Graphics 25(5), (Proc. **IEEE VR**), 2019, pp. 2133–2144.
- [8] Rebecca Foerster, Christian Poth, Christian Behler, Mario Botsch, Werner Schneider: *Neuropsychological assessment of visual selective attention and processing capacity with head-mounted displays*, Neuropsychology, 33(3), 2019, pp. 309–318.
- [9] Thomas Gietzen, Robert Brylka, Jascha Achenbach, Katja zum Hebel, Elmar Schömer, Mario Botsch, Ulrich Schwanecke, Ralf Schulze: *A method for automatic forensic facial reconstruction based on dense statistics of soft tissue thickness*, PLoS ONE, 14(1), 2019.
- [10] Matthias Schröder, Thomas Waltemate, Jonathan Maycock, Tobias Röhlig, Helge Ritter, Mario Botsch: *Design and Evaluation of Reduced Marker Layouts for Hand Motion Capture*, Computer Animation and Virtual Worlds, 29(6), 2018.

- [11] Felix Hülsmann, Jan-Philipp Göpfert, Barbara Hammer, Stefan Kopp, Mario Botsch: *Classification of motor errors to provide real-time feedback for sports coaching in virtual reality – A case study in squats and Tai Chi pushes*, Computers & Graphics 76, 2018, pp. 47–59.
- [12] Jascha Achenbach, Robert Brylka, Thomas Gietzen, Katja zum Hebel, Elmar Schömer, Ralf Schulze, Mario Botsch, Ulrich Schwanecke: *A Multilinear Model for Bidirectional Craniofacial Reconstruction*, Proc. of Eurographics Workshop on Visual Computing for Biology and Medicine, 2018, pp. 67–76.
- [13] Martin Komaritzan, Mario Botsch: *Projective Skinning*, Proceedings of the ACM on Computer Graphics and Interactive Techniques 1(1), 2018, pp. 12:1–12:19.
- [14] Andreas Richter, Stefan Dresselhaus, Stefan Menzel, Mario Botsch: *Orthogonalization of Linear Representations for Efficient Evolutionary Design Optimization*, Proc. of ACM Genetic and Evolutionary Computation Conference, 2018, pp. 1356–1363.
- [15] Thomas Waltemate, Dominik Gall, Daniel Roth, Mario Botsch, Marc Erich Latoschik: *The Impact of Avatar Personalization and Immersion on Virtual Body Ownership, Presence, and Emotional Response*, IEEE Transactions on Visualization and Computer Graphics 24(4), (Proc. IEEE VR), 2018, pp. 1643–1652. **Best journal paper award.**
- [16] Christian Poth, Rebecca Foerster, Christian Behler, Ulrich Schwanecke, Werner Schneider, Mario Botsch: *Ultra-high temporal resolution of visual presentation using gaming monitors and G-Sync*, Behavior Research Methods, 50(1), 2018, pp. 26–38.
- [17] Lorenz Dehn, Leona Kater, Martina Piefke, Mario Botsch, Martin Driessen, Thomas Beblo: *Training in a comprehensive everyday-like virtual reality environment compared to computerized cognitive training for patients with depression*, Computers in Human Behavior 79, 2018, pp. 40–52.
- [18] Jan Philip Göpfert, Christina Göpfert, Mario Botsch, Barbara Hammer: *Effects of Variability in Synthetic Training Data on Convolutional Neural Networks for 3D Head Reconstruction*, Proc. of IEEE Symposium Series on Computational Intelligence, 2017.
- [19] Jascha Achenbach, Thomas Waltemate, Marc Latoschik, Mario Botsch: *Fast Generation of Realistic Virtual Humans*, Proc. of ACM Symposium on Virtual Reality Software and Technology, 2017, pp. 12:1–12:10.
- [20] Marc Latoschik, Daniel Roth, Dominik Gall, Jascha Achenbach, Thomas Waltemate, Mario Botsch: *The Effect of Avatar Realism in Immersive Social Virtual Realities*, Proc. of ACM Symposium on Virtual Reality Software and Technology, 2017, pp. 39:1–39:10.
- [21] Felix Hülsmann, Andreas Richter, Stefan Kopp, Mario Botsch: *Accurate Temporal Alignment for Online Error Analysis of Human Motor Performances*, Proc. of ACM Motion in Games, 2017, pp. 7:1–7:6.
- [22] Charlotte Diehl, Birte Schiffhauer, Friederike Eyssel, Jascha Achenbach, Sören Klett, Mario Botsch, Stefan Kopp: *Get One or Create One: The Impact of Graded*

- Involvement in a Selection Procedure for a Virtual Agent on Satisfaction and Suitability Ratings*, Proc. of International Conference on Intelligent Virtual Agents, 2017, pp. 109–118.
- [23] Iwan de Kok, Felix Hülsmann, Thomas Waltemate, Cornelia Frank, Julian Hough, Thies Pfeiffer, David Schlangen, Thomas Schack, Mario Botsch, Stefan Kopp: *The Intelligent Coaching Space: A Demonstration*, Proc. of International Conference on Intelligent Virtual Agents, 2017, pp. 105–108.
- [24] Roger Blanco i Ribera, Eduard Zell, J.P. Lewis, Junyong Noh, Mario Botsch: *Facial Retargeting with Automatic Range of Motion Alignment*, **ACM Transactions on Graphics** 36(4), (Proc. ACM SIGGRAPH), 2017, pp. 154:1–154:12.
- [25] Andreas Richter, Stefan Menzel, Mario Botsch: *Preference-guided Adaptation of Deformation Representations for Evolutionary Design Optimization*, Proc. of IEEE Congress on Evolutionary Computation, 2017, pp. 2110–2119.
- [26] Sebastian Schindler, Eduard Zell, Mario Botsch, Johanna Kissler, *Differential effects of face-realism and emotion on event-related brain potentials and their implications for the uncanny valley theory*, **Scientific Reports** 7, 45003, 2017.
- [27] Andreas Richter, Jascha Achenbach, Stefan Menzel, Mario Botsch: *Multi-objective Representation Setups for Deformation-based Design Optimization*, Proc. of International Conference on Evolutionary Multi-Criterion Optimization (EMO), Lecture Notes in Computer Science, vol. 10173, 2017, pp. 514–528.
- [28] Rebecca Foerster, Christian Poth, Christian Behler, Mario Botsch, Werner Schneider: *Using the virtual reality device Oculus Rift for neuropsychological assessment of visual processing capabilities*, **Scientific Reports** 3, 37016, 2016.
- [29] Thomas Waltemate, Irene Senna, Felix Hülsmann, Marieke Rohde, Stefan Kopp, Marc Ernst, Mario Botsch: *The Impact of Latency on Perceptual Judgments and Motor Performance in Closed-loop Interaction in Virtual Reality*, Proc. of ACM Symposium on Virtual Reality Software and Technology, 2016, pp. 27–35.
- [30] Katja Wolf, Changil Kim, Henning Zimmer, Christopher Schroers, Mario Botsch, Olga Sorkine-Hornung, Alexander Sorkine-Hornung: *Point Cloud Noise and Outlier Removal for Image-Based 3D Reconstruction*, Proc. of International Conference on 3D Vision, 2016.
- [31] Babak Hosseini, Felix Hülsmann, Mario Botsch, Barbara Hammer: *Non-Negative Kernel Sparse Coding for the Analysis of Motion Data*, Proc. of International Conference on Artificial Neural Networks, 2016, pp. 506–514.
- [32] Andreas Richter, Jascha Achenbach, Stefan Menzel, Mario Botsch: *Evolvability as a Quality Criterion for Linear Deformation Representations in Evolutionary Optimization*, Proc. of IEEE Congress on Evolutionary Computation, 2016, pp. 901–910. **Best student paper runner-up.**
- [33] Daniel Sieger, Sergius Gaulik, Jascha Achenbach, Stefan Menzel, Mario Botsch: *Constrained Space Deformation Techniques for Design Optimization*, Computer Aided Design 72, 2016, pp. 40–51.



- [34] Jonathan Maycock, Tobias Röhlig, Matthias Schröder, Mario Botsch, Helge Ritter: *Fully Automatic Optical Motion Tracking using an Inverse Kinematics Approach*, Proc. of IEEE-RAS International Conference on Humanoid Robots, 2015, pp. 461–466.
- [35] Matthias Schröder, Jonathan Maycock, Mario Botsch: *Reduced Marker Layouts for Optical Motion Capture of Hands*, Proc. of ACM Motion in Games, 2015, pp. 7–16. **One of top-5 papers, invited for a journal submission.**
- [36] Thomas Waltemate, Felix Hülsmann, Thies Pfeiffer, Stefan Kopp, Mario Botsch: *Realizing a Low-latency Virtual Reality Environment for Motor Learning*, Proc. of ACM Symposium on Virtual Reality Software and Technology, 2015, pp. 139–147.
- [37] Iwan de Kok, Julian Hough, Felix Hülsmann, Mario Botsch, David Schlangen, Stefan Kopp: *A Multimodal System for Real-Time Action Instruction in Motor Skill Learning*, Proc. of ACM International Conference on Multimodal Interaction, 2015, pp. 355–362.
- [38] Eduard Zell, Carlos Aliaga, Adrian Jarabo, Katja Zibrek, Diego Gutierrez, Rachel McDonnell, Mario Botsch: *To Stylize or not to Stylize? The Effect of Shape and Material Stylization on the Perception of Computer-Generated Faces*, **ACM Transactions on Graphics** 34(6), (Proc. ACM SIGGRAPH Asia), 2015, pp. 184:1–184:12.
- [39] Jascha Achenbach, Eduard Zell, Mario Botsch: *Accurate Face Reconstruction through Anisotropic Fitting and Eye Correction*, Proc. of Vision, Modeling and Visualization, 2015, pp. 1–8.
- [40] Felix Hülsmann, Cornelia Frank, Thomas Schack, Stefan Kopp, Mario Botsch: *Multi-Level Analysis of Motor Actions as a Basis for Effective Coaching in Virtual Reality*, Proc. of International Symposium on Computer Science in Sport, 2015, pp. 211–214.
- [41] Andrea Tagliasacchi, Matthias Schröder, Anastasia Tkach, Sofien Bouaziz, Mario Botsch, Mark Pauly: *Robust Articulated-ICP for Real-Time Hand Tracking*, Computer Graphic Forum 34(5) (Proc. of Eurographics Symp. on Geometry Processing), 2015, pp. 101–114. **Best Paper Award.**
- [42] Andreas Richter, Mario Botsch, Stefan Menzel: *Evolvability of Representations in Complex System Engineering: a Survey*, Proc. of IEEE Congress on Evolutionary Computation, 2015, pp. 1327–1335.
- [43] Daniel Sieger, Stefan Menzel, Mario Botsch: *On Shape Deformation Techniques for Simulation-based Design Optimization*, SEMA SIMAI Springer Series, 2015, pp. 281–303.
- [44] Matthias Schröder, Mario Botsch: *Online Adaptive PCA for Inverse Kinematics Hand Tracking*, Proc. of Vision, Modeling and Visualization, 2014, pp. 111–118.
- [45] Daniel Sieger, Stefan Menzel, Mario Botsch: *Constrained Space Deformation for Design Optimization*, Proceedia Engineering 82 (Proc. of International Meshing Roundtable), 2014, pp. 114–126. **Best Paper Award. Invited for a journal submission.**

- [46] Thomas Waltemate, Björn Sommer, Mario Botsch: *Membrane Mapping: Combining Mesoscopic and Molecular Cell Visualization*, Proc. of Eurographics Workshop on Visual Computing for Biology and Medicine, 2014, pp. 89–96.
- [47] Leslie Theunissen, Michael Hertrich, Cord Wiljes, Eduard Zell, Christian Behler, Andre Krause, Holger Bekemeier, Philipp Cimiano, Mario Botsch, Volker Dürr: *A Natural Movement Database for Management, Documentation, Visualization, Mining and Modeling of Locomotion Experiments*, Proc. of Living Machines, 2014, pp. 308–319.
- [48] Francesco Bonarrigo, Alberto Signoroni, Mario Botsch: *Deformable Registration using Patch-Wise Shape Matching*, Graphical Models 76(5), (Proc. Geometric Modeling and Processing), 2014, pp. 554–565 .
- [49] Matthias Schröder, Jonathan Maycock, Helge Ritter, Mario Botsch: *Real-Time Hand Tracking using Synergistic Inverse Kinematics*, Proc. of IEEE International Conference on Robotics and Automation (ICRA), 2014, pp. 5447–5454.
- [50] Daniel Sieger, Stefan Menzel, Mario Botsch: *RBF Morphing Techniques for Simulation-based Design Optimization*, Engineering with Computers, 30(2), 2014, pp. 161–174.
- [51] Philip Grewe, Denise Lahr, Agnes Kohsik, Eugen Dyck, Hans Markowitsch, Christian Bien, Mario Botsch, Martina Piefke: *Real-life memory and spatial navigation in patients with focal epilepsy: Ecological validity of a virtual-reality supermarket task*, Epilepsy & Behavior 31, 2014, pp. 57–66.
- [52] Eugen Dyck, Thies Pfeiffer, Mario Botsch: *Evaluation of Surround-View and Self-Rotation in the OctaVis VR-System*, Proc. of Joint Virtual Reality Conference, 2013, pp. 1–8.
- [53] Eduard Zell, Mario Botsch: *ElastiFace: Matching and Blending Textured Faces*, Proc. of International Symposium on Non-Photorealistic Animation and Rendering, 2013, pp. 15–24.
- [54] Matthias Schröder, Jonathan Maycock, Helge Ritter, Mario Botsch: *Analysis of Hand Synergies for Inverse Kinematics Hand Tracking*, Proc. of ICRA/IROS Workshop on Hand Synergies, 2013.
- [55] Eduard Zell, Eugen Dyck, Agnes Kohsik, Philip Grewe, David Flentge, York Winter, Martina Piefke, Mario Botsch: *OctaVis: A Virtual Reality System for Clinical Studies and Rehabilitation*, Proc. of Eurographics Medical Prize Papers, 2013.
- [56] Marion Dunyach, David Vanderhaeghe, Loïc Barthe, Mario Botsch: *Adaptive Remeshing for Real-Time Mesh Deformation*, Proc. of Eurographics Short Papers, 2013.
- [57] Philip Grewe, Agnes Kohsik, David Flentge, Eugen Dyck, Christian Bien, York Winter, Mario Botsch, Hans J. Markowitsch, Martina Piefke: *Learning real-life cognitive abilities in a novel 360°-virtual reality supermarket: a neuropsychological study of healthy participants and patients with epilepsy*, Journal of NeuroEngineering and Rehabilitation 10(42), 2013.
- [58] Matthias Schröder, Christof Elbrechter, Jonathan Maycock, Robert Haschke, Mario Botsch, Helge Ritter: *Real-Time Hand Tracking with a Color Glove for the Actuation*

- of *Anthropomorphic Robot Hands*, Proc. of IEEE-RAS International Conference on Humanoid Robots, 2012, pp. 262-269.
- [59] Eugen Dyck, Eduard Zell, Agnes Kohsik, Philip Grewe, York Winter, Martina Piefke, Mario Botsch: *OctaVis: An Easy-to-Use VR-System for Clinical Studies*, Proc. of Virtual Reality Interaction and Physical Simulation, 2012, pp. 127-136.
- [60] Eugen Dyck, Holger Schmidt, Martina Piefke, Mario Botsch: *OctaVis: Optimization Techniques for Multi-GPU Multi-View Rendering*, Journal of Virtual Reality and Broadcasting, 9(6), 2012.
- [61] Daniel Sieger, Stefan Menzel, Mario Botsch: *High Quality Mesh Morphing Using Triharmonic Radial Basis Functions*, Proc. of International Meshing Roundtable, 2012, pp. 1-15. **One of top-10 papers, invited for a journal submission.**
- [62] Eduard Zell, Mario Botsch: *Developing design guidelines for characters from analyzing empirical studies on the uncanny valley*, Proc. of ACM International Symposium on Facial Analysis and Animation, 2012.
- [63] Daniel Sieger, Stefan Menzel, Mario Botsch: *A Comprehensive Comparison of Shape Deformation Methods in Evolutionary Design Optimization*, Proc. of International Conference on Engineering Optimization, 2012.
- [64] Stefan Fröhlich, Mario Botsch: *Example-Driven Deformations Based on Discrete Shells*, Computer Graphics Forum 30(8), 2011, pp. 2246-2257.
- [65] Daniel Sieger, Mario Botsch: *Design, Implementation, and Evaluation of the Surface\_mesh Data Structure*, International Meshing Roundtable, 2011, pp. 533-550.
- [66] Janick Martinez Esturo, Christian Rössl, Stefan Fröhlich, Mario Botsch, Holger Theisel: *Pose Correction by Space-Time Integration*, Vision, Modeling & Visualization, 2011, pp. 33-40.
- [67] Eugen Dyck, Holger Schmidt, Mario Botsch: *OctaVis: A Simple and Efficient Multi-View Rendering System*, Proc. of GI VR/AR Workshop, 2010, pp. 1-8. **One of top-3 papers, invited for a journal submission.**
- [68] Daniel Sieger, Pierre Alliez, Mario Botsch: *Optimizing Voronoi Diagrams for Polygonal Finite Element Computations*, Proc. of 19th International Meshing Roundtable, 2010, pp. 335-350.
- [69] Sebastian Martin, Peter Kaufmann, Mario Botsch, Eitan Grinspun, Markus Gross: *Unified Simulation of Elastic Rods, Shells, and Solids*, **ACM Transactions on Graphics** 29(3), (Proc. ACM SIGGRAPH), 2010, pp. 39:1-39:10.
- [70] Peter Kaufmann, Sebastian Martin, Mario Botsch, Eitan Grinspun, Markus Gross: *Enrichment Textures for Detailed Cutting of Shells*, **ACM Transactions on Graphics** 28(3), (Proc. ACM SIGGRAPH), 2009, pp. 50:1-50:10.
- [71] Peter Kaufmann, Sebastian Martin, Mario Botsch, Markus Gross: *Flexible Simulation of Deformable Models Using Discontinuous Galerkin FEM*, Journal of Graphical Models 71(4), 2009, pp. 153-167.

- [72] Roland Angst, Nils Thuerey, Mario Botsch, Markus Gross: *Robust and Efficient Wave Simulations on Deforming Meshes*, Computer Graphics Forum 27(7) (Proc. Pacific Graphics), 2008, pp. 1895–1900.
- [73] Sebastian Martin, Peter Kaufmann, Mario Botsch, Martin Wicke, Markus Gross: *Polyhedral Finite Elements Using Harmonic Basis Functions*, Computer Graphics Forum 27(5) (Proc. Symp. on Geometry Processing), 2008, pp. 1521–1529. **Best Student Paper Award.**
- [74] Mario Botsch, Olga Sorkine: *On Linear Variational Surface Deformation Methods*, IEEE Transactions on Visualization and Computer Graphics (TVCG) 14(1), 2008, pp. 213–230.
- [75] Peter Kaufmann, Sebastian Martin, Mario Botsch, Markus Gross: *Flexible Simulation of Deformable Models Using Discontinuous Galerkin FEM*, ACM SIGGRAPH / Eurographics Symp. on Computer Animation, 2008, pp. 105–115. **One of top-3 papers, invited for a journal submission.**
- [76] Bernd Bickel, Mario Botsch, Miguel Otaduy, Manuel Lang, Markus Gross: *Pose-Space Animation and Transfer of Facial Details*, ACM SIGGRAPH / Eurographics Symp. on Computer Animation, 2008, pp. 57–66.
- [77] Simon Heinzle, Gaël Guennebaud, Mario Botsch, Markus Gross: *A Hardware Processing Unit for Point Sets*, Graphics Hardware 2008, pp. 21–31. **Best Paper Award.**
- [78] Mario Botsch, Martin Wicke, Markus Gross: *Finite Elemente Methoden auf konvexen Polyedern für physikalisch-basierte Schnittsimulationen*, DGMP 2008.
- [79] Mario Botsch, Mark Pauly, Martin Wicke, Markus Gross: *Adaptive Space Deformations Based on Rigid Cells*, Computer Graphics Forum 26(3), (Proc. Eurographics), 2007, pp. 339–347.
- [80] Martin Wicke, Mario Botsch, Markus Gross: *A Finite Element Method on Convex Polyhedra*, Computer Graphics Forum 26(3), (Proc. Eurographics), 2007, pp. 355–364.
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## TEACHING & SUPERVISION

### LECTURES AT BIELEFELD UNIVERSITY

- since 2008 Introduction to Computer Graphics,  
3D Scanning and Geometry Processing,  
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### INTERNATIONAL COURSES & TUTORIALS

- 2012 Pierre Alliez, Mario Botsch, Keenan Crane, Julie Digne, Justin Solomon, Etienne Vouga: *Two-day course on Geometry Processing*, Eurographics Symposium on Geometry Processing
- 2011 Pierre Alliez, Mario Botsch, Misha Kazhdan, Mark Pauly: *Two-day course on Geometry Processing*, Eurographics Symposium on Geometry Processing
- 2009 Olga Sorkine, Mario Botsch: *Half-day course on Interactive Shape Modeling and Deformation*, Eurographics
- 2008 Leif Kobbelt, Mario Botsch: *Full-day course on Geometric Modeling Based on Polygonal Meshes*, Eurographics Symposium on Geometry Processing
- 2008 Mario Botsch, Mark Pauly, Leif Kobbelt, Pierre Alliez, Bruno Levy: *Full day course on Geometric Modeling Based on Polygonal Meshes*, Eurographics
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2009–2014	Daniel Sieger
2009–2013	Eugen Dyck
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2009–2012	Stefan Fröhlich
2009–2011	Jan Hammerschmidt
2007–2010	Sebastian Martin (co-supervised, ETH Zürich)
2007–2010	Peter Kaufmann (co-supervised, ETH Zürich)
2006–2008	Bern Bickel (co-supervised, ETH Zürich)
2006–2008	Simon Heinzle (co-supervised, ETH Zürich)

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- 2010 Dong-Ming Yan, *University of Hong Kong*  
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 Michael Eigensatz, *ETH Zürich*  
 Iurie Chiosa, *Siegen University*  
 Nader Salman, *INRIA Sophia-Antipolis*

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- 2019 [“Avatare gegen Adipositas”](#)  
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 Article in *Westfalenblatt*  
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- 2018 TV spot about Virtual Avatars  
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- 2017 “In zehn Minuten zum Avatar”  
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