

PROF. DR. MARIO BOTSCH

- 📍 Chair of Computer Graphics
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- 🔍 <https://scholar.google.com/citations?user=VSiwBoYAAAAJ>



PERSONAL INFORMATION

- 1974 born in Bremen, Germany
- Nationality German
- Marital status lovely wife, cool daughter
- Languages German, English, C++

EDUCATION

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

WORK EXPERIENCE

- since 2020 Professor for Computer Graphics
Department of Computer Science, TU Dortmund University, Germany
- 2008–2020 Professor for Computer Graphics
Faculty of Technology, Bielefeld University, Germany
- 2005–2008 Lecturer & Senior Researcher
Computer Graphics Laboratory, ETH Zurich, Switzerland
- 2001–2005 Research assistant & PhD student
Computer Graphics Group, RWTH Aachen, Germany
- 1999–2000 Research assistant & PhD student
Computer Graphics Group, Max Planck Institute for Informatics, Saarbrücken, Germany

→ Awards → Funding → Service → Publications → Teaching → Supervision → Publicity

AWARDS

RESEARCH AWARDS

- 2025 PhD Award for PhD student Astrid Pontzen (née Bunge)
CS department, TU Dortmund University
- 2025 Best Paper Honorable Mention
IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR)
- 2025 Best Poster Award
IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR)
- 2024 Best Paper Honorable Mention
ACM SIGGRAPH
- 2023 Best Paper Honorable Mention
ACM Conference on Motion, Interaction and Games
- 2023 Best Paper Honorable Mention
ACM CHI Conference on Human Factors in Computing Systems
- 2020 Best Paper Award
ACM Symposium on Virtual Reality Software and Technology
- 2020 Best Paper Award
Vision, Modeling and Visualization
- 2019 DIVR Best Impact Award for project ViTraS
Deutsches Institut für Virtual Reality
- 2019 Eurographics PhD Award for PhD student Eduard Zell
Eurographics Association
- 2018 Best Paper Award
IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR)
- 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
- 2013 Eurographics Medical Prize (third place) for the CITmed project
Eurographics
- 2008 Best Student Paper Award
Eurographics Symposium on Geometry Processing
- 2008 Best Paper Award
Graphics Hardware
- 2007 Eurographics Young Researcher Award
Eurographics Association
- 2007 Best Course Notes Award
ACM SIGGRAPH
- 2006 Best Paper Award
Eurographics Symposium on Geometry Processing
- 2006 Borchers Medal for PHD thesis
RWTH Aachen

- 2006 Nomination for Dissertation Award of Gesellschaft für Informatik
CS department of RWTH Aachen
- 2004 Best Paper Award
Journal of Computers & Graphics

TEACHING AWARDS

- 2025 Lehrer-Lämpel-Preis for lecture “Geometric Modeling”, summer term 2025
CS department, TU Dortmund University
- 2025 Lehrer-Lämpel-Preis for lecture “Computer Animation”, winter term 2024/2025
CS department, TU Dortmund University
- 2024 Lehrer-Lämpel-Preis for lecture “Geometric Modeling”, summer term 2024
CS department, TU Dortmund University
- 2024 Lehrer-Lämpel-Preis for lecture “Computer Graphics”, winter term 2023/2024
CS department, TU Dortmund University
- 2023 Lehrer-Lämpel-Preis for lecture “Geometric Modeling”, summer term 2023
CS department, TU Dortmund University
- 2023 Lehrer-Lämpel-Preis for lecture “Computer Graphics”, winter term 2022/2023
CS department, TU Dortmund University
- 2022 Teaching award (best large course) for lecture “Mathematics for Computer Science”
TU Dortmund University
- 2022 Lehrer-Lämpel-Preis for lecture “Geometric Modeling”, summer term 2022
CS department, TU Dortmund University
- 2022 Lehrer-Lämpel-Preis for lecture “Computer Animation”, winter term 2021/2022
CS department, TU Dortmund University
- 2021 Lehrer-Lämpel-Preis for lecture “Geometric Modeling”, summer term 2021
CS department, TU Dortmund University
- 2021 Lehrer-Lämpel-Preis for lecture “Computer Graphics”, winter term 2020/2021
CS department, TU Dortmund University
- 2020 Golden Chalk for summer term 2020
Faculty of Technology, Bielefeld University
- 2019 Long-Term Excellent Teaching Award, summer term 2019
Faculty of Technology, Bielefeld University
- 2019 Golden Chalk for winter term 2018/2019
Faculty of Technology, Bielefeld University
- 2018 Silver Chalk for summer term 2018
Faculty of Technology, Bielefeld University
- 2018 Golden Chalk for winter term 2017/2018
Faculty of Technology, Bielefeld University
- 2017 Silver Chalk for winter term 2016/2017
Faculty of Technology, Bielefeld University
- 2014 Silver Chalk for winter term 2013/2014
Faculty of Technology, Bielefeld University
- 2013 Golden Chalk for winter term 2012/13
Faculty of Technology, Bielefeld University

- 2012 Golden Chalk for summer term 2012
Faculty of Technology, Bielefeld University
- 2011 Golden Chalk for summer term 2011
Faculty of Technology, Bielefeld University
- 2011 Silver Chalk for winter term 2010/2011
Faculty of Technology, Bielefeld University
- 2010 Golden Chalk for winter term 2009/2010
Faculty of Technology, Bielefeld University

PROJECTS & FUNDING

- 2023–2026 “InVirtuo 4.0: Experimental Research in Virtual Environments”
Funded by Ministry of Culture and Science North Rhine-Westphalia (MKW NRW)
Total budget € 3 M, own budget € 204 k.
- 2021–2025 “HyLeC: Hybrid Learning Center”
Funded by Stiftung Innovation in der Hochschullehre
Total budget € 4.5 M, own budget ca. € 940 k.
- 2021–2024 “HiAvA: Hybrid Avatar-Agent Technologies for Social Interaction in XR”
Funded by Federal Ministry of Education and Research (BMBF)
Total budget € 1.45 M, own budget € 280 k.
- 2021–2024 “eTaRDIS: Exploration of Temporal and Spatial Data in Immersive Scenarios”
Funded by the Federal Ministry of Education and Research (BMBF)
Total budget € 1 M, own budget € 272 k.
- 2020–2023 “VIA-VR: Technology Platform for VR Adventures in Medical Therapy”
Funded by the Federal Ministry of Education and Research (BMBF)
Total budget € 2.1 M, own budget € 322 k.
- 2019–2022 “ViTraS: Virtual Reality Therapy by Stimulation of Modulated Body Image”
Funded by the Federal Ministry of Education and Research (BMBF)
Total budget € 2.5 M, own budget € 415 k.
- 2019–2020 “Sparse Geometry Representations for Design Understanding and Cooperative Manipulation”
Funded by Honda Research Institute Europe
Budget € 92 k.
- 2013–2018 “ICSPACE: Intelligent Coaching Space”
Funded by German Research Foundation through Excellence Cluster CITEC (DFG EXC 277)
Coordinator (with S. Kopp and T. Schack), total budget € 1.6 M.
- 2015–2017 “KogniHome – The Smart Apartment”
Funded by the Federal Ministry of Education and Research (BMBF)
Total budget € 11.3 M, own budget € 222 k.
- 2014–2017 “Optimality of Adaptive Representations for Dynamic Evolutionary Optimization”
Funded by Honda Research Institute Europe
Budget € 262 k.
- 2013 “Immersive Virtuelle Experimentier-Umgebung (CAVE)”
Major Installation (HBFG Großgerät), funded by State NRW
Coordinator, budget € 300 k.

- 2013 “Non-Rigid Registration of Shoelast”
Funded by Adidas GmbH, Germany
Budget € 30 k.
- 2012 “Mesh Optimization for Numerical Simulation”
Funded by ABB Group, Switzerland
Budget € 16 k.
- 2011–2014 “Constrained Deformation for Evolutionary Optimization”
Funded by Honda Research Institute Europe
Budget € 231 k.
- 2010–2013 “Realtime Acquisition and Dynamic Modeling of Human Faces, Upper-Bodies, and Hands”
Funded by German Research Foundation (DFG)
Budget € 202 k.
- 2009–2012 “CITmed: Cognitive Interaction Technology for Medical Applications”
Funded through program HighTech.NRW by State NRW
Coordinator, budget € 1.7 M.
- 2009–2010 “Realtime Geometry Acquisition and Reconstruction”
Funded by Sirona Dental Systems
Budget € 36 k.
- 2007–2008 “Physically-Based Modeling and Hardware Architectures for Point-Based Graphics”
Funded by Swiss National Science Foundation (SNF)
Budget CHF 177 k.

SERVICE ACTIVITIES

CONFERENCE ORGANIZATION

- 2022 Program co-chair, *Vision, Modeling, and Visualization*
- 2017 Program co-chair, *Symposium on Solid and Physical Modeling*
- 2017 Conference co-chair, *International Workshop on Virtual Social Interaction*
- 2016 Conference co-chair, *GI Workshop Virtual and Augmented Reality*
- 2016 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, 2024, 2025)
- Eurographics (2007, 2008, 2010, 2012, 2013, 2015, 2016, 2018, 2020, 2021, 2025, 2026)
- Eurographics Symp. on Geometry Processing (2007–2010, 2012–2025)
- 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, 2012–2021, 2023–2025)
Symp. on 3D Data Processing, Visualization, and Transmission (2008)
Jahrestagung Deutsche Gesellschaft Med. Physik (2008)

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

SERVICE ACTIVITIES AT TU DORTMUND

since 2024 Vice Dean, CS Department
since 2024 Senate of TU Dortmund
since 2024 Diversity Commission, CS Department
since 2022 Faculty Conference, CS Department
2021–2023 Chair of Examination Board and Master Admission Board, CS Department
2020–2023 Member of Examination Board and Master Admission Board, CS Department

SERVICE ACTIVITIES AT BIELEFELD UNIVERSITY

2019–2020 Vice Dean, Faculty of Technology
2018–2020 Senate of Bielefeld University
2016–2020 Teaching Commission, Faculty of Technology
2010–2020 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 program *Media Informatics*

PUBLICATIONS

This section lists 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 [here](#). My Google Scholar profile can be found [here](#), my ORCID profile [here](#).

CONFERENCE & JOURNAL PUBLICATIONS

- [1] G. Nolte, F. Kemper, U. Schwanecke, and M. Botsch. *Skeletal-Driven Animation of Anatomical Humans via Neural Deformation Gradients*. In: Computer Graphics Forum 45.2 (2026). to appear.
- [2] M. Derksen, V. Diekel, T. Kuhlen, M. Botsch, and T. Weissker. *SPLOCIS – Extending SPLoMs to a Scatterplot Cube with Interactable Shadows for Immersive Analysis in Virtual Reality*. In: Proceedings of IEEE Virtual Reality and 3D User Interfaces. 2026. to appear.
- [3] M. L. Fiedler, C. Merz, L. Schach, J. Tschanter, M. Botsch, C. Wienrich, and M. E. Latoschik. *Am I Still Me? Visual Congruence Across Reality–Virtuality and Avatar Appearance in Shaping Self-Perception and Behavior*. In: IEEE Transactions on Visualization and Computer Graphics (2026). to appear.
- [4] F. Runte, T. Menzel, U. Schwanecke, and M. Botsch. *Compensating Motion-Induced Errors in Smartphone-Based VR Avatar Reconstruction*. In: Proceedings of ACM Symposium on Virtual Reality Software and Technology. 2025.
- [5] S. Wagner and M. Botsch. *Robust Discrete Differential Operators for Wild Geometry*. In: Proceedings of Vision, Modeling, Visualization. 2025.
- [6] P. Kullmann, T. Schell, M. Botsch, and M. E. Latoschik. *Eye-to-Eye or Face-to-Face? Face and Head Substitution for Co-Located AR*. In: Frontiers in Virtual Reality 6 (2025).
- [7] N. Wagner, U. Schwanecke, and M. Botsch. *NePHIM: A Neural Physics-Based Head-Hand Interaction Model*. In: Computer Graphics Forum 44.2 (2025).
- [8] T. Menzel, E. Wolf, S. Wenninger, N. Spinczyk, L. Holderrieth, C. Wienrich, U. Schwanecke, M. E. Latoschik, and M. Botsch. *Avatars for the Masses: Smartphone-Based Reconstruction of Humans for Virtual Reality*. In: Frontiers in Virtual Reality 6 (2025).
- [9] K. Gemesi, N. Döllinger, N.-A. Weinberger, E. Wolf, D. Mal, S. Keppler, S. Wenninger, E. Bader, C. Wienrich, C. Luck-Sikorski, M. E. Latoschik, J. H. Isral, M. Botsch, and C. Holzapfel. *Virtual Body Image Exercises for People With Obesity – Results on Eating Behavior and Body Perception of the ViTraS Pilot Study*. In: BMC Medical Informatics and Decision Making 25.176 (2025).
- [10] M. Weiß, P. Krop, L. Tremel, E. Neuser, M. Botsch, M. J. Herrmann, M. E. Latoschik, and G. Hein. *The Buffering of Autonomic Fear Responses Is Moderated by the Characteristics of a Virtual Character*. In: Computers in Human Behavior 168 (2025).
- [11] M. Derksen, T. Kuhlen, M. Botsch, and T. Weissker. *Minimalism or Creative Chaos? On the Arrangement and Analysis of Numerous Scatterplots in Immersive 3D Knowledge Spaces*. In: IEEE Transactions on Visualization and Computer Graphics 31.5 (2025).
- [12] M. L. Fiedler, M. Botsch, C. Wienrich, and M. E. Latoschik. *Self-Similarity Beats Motor Control in Augmented Reality Body Weight Perception*. In: IEEE Transactions on Visualization and Computer Graphics 31.5 (2025). **Best Paper Honorable Mention**.
- [13] P. Kullmann, T. Schell, T. Menzel, M. Botsch, and M. E. Latoschik. *Coverage of Facial Expressions and Its Effects on Avatar Embodiment, Self-Identification, and Uncanniness*. In: IEEE Transactions on Visualization and Computer Graphics 31.5 (2025).
- [14] L. Holderrieth, E. Wolf, M. L. Fiedler, M. Botsch, M. E. Latoschik, and C. Wienrich. *Do You Feel Better? The Impact of Embodying Photorealistic Avatars with Ideal Body Weight on Attractiveness and Self-Esteem in Virtual Reality*. In: Proceedings of IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW). 2025. **Best Poster Award**.

- [15] M. L. Fiedler, E. Wolf, N. Döllinger, D. Mal, M. Botsch, M. E. Latoschik, and C. Wienrich. *From Avatars to Agents: Self-Related Cues through Embodiment and Personalization Affect Body Perception in Virtual Reality*. In: IEEE Transactions on Visualization and Computer Graphics 30.11 (2024).
- [16] M. Korosteleva, T. L. Kesdogan, F. Kemper, S. Wenninger, J. Koller, Y. Zhang, M. Botsch, and O. Sorkine-Hornung. *GarmentCodeData: A Dataset of 3D Made-to-Measure Garments With Sewing Patterns*. In: Proceedings of European Conference on Computer Vision. 2024.
- [17] M. Gillespie, D. Yang, M. Botsch, and K. Crane. *Ray Tracing Harmonic Functions*. In: ACM Transaction on Graphics 43.2 (2024). **Best Paper Honorable Mention**.
- [18] D. Mal, N. Döllinger, E. Wolf, S. Wenninger, M. Botsch, C. Wienrich, and M. E. Latoschik. *Am I the Odd One? Exploring (In)Congruencies in the Realism of Avatars and Virtual Others in Virtual Reality*. In: Frontiers in Virtual Reality 5 (2024).
- [19] N. Wagner, U. Schwanecke, and M. Botsch. *AnaConDaR: Anatomically-Constrained Data-Adaptive Facial Retargeting*. In: Computers & Graphics 122 (2024).
- [20] N. Döllinger, D. Mal, S. Keppler, E. Wolf, M. Botsch, J. H. Israel, M. E. Latoschik, and C. Wienrich. *Virtual Body Swapping: A VR-Based Approach to Embodied Third-Person Self-Processing in Mind-Body Therapy*. In: Proceedings of ACM CHI Conference on Human Factors in Computing Systems. 2024.
- [21] D. Mal, E. Wolf, N. Döllinger, M. Botsch, C. Wienrich, and M. E. Latoschik. *From 2D-Screens to VR: Exploring the Effect of Immersion on the Plausibility of Virtual Humans*. In: Proceedings of ACM CHI Conference on Human Factors in Computing Systems (Extended Abstracts). 2024.
- [22] A. Pontzen (née Bunge), D. Bukenberger, S. Wagner, M. Alexa, and M. Botsch. *Polygon Laplacian Made Robust*. In: Computer Graphics Forum 43.2 (2024).
- [23] S. Wenninger, F. Kemper, U. Schwanecke, and M. Botsch. *TailorMe: Self-Supervised Learning of an Anatomically Constrained Volumetric Human Shape Model*. In: Computer Graphics Forum 43.2 (2024).
- [24] N. Wagner, U. Schwanecke, and M. Botsch. *SparseSoftDECA: Efficient High-Resolution Physics-Based Facial Animation from Sparse Landmarks*. In: Computers & Graphics 119 (2024).
- [25] A. Pontzen (née Bunge) and M. Botsch. *A Survey on Discrete Laplacians for General Polygonal Meshes*. In: Computer Graphics Forum 42.2 (2023).
- [26] N. Wagner, U. Schwanecke, and M. Botsch. *SoftDECA: Computationally Efficient Physics-Based Facial Animations*. In: Proceedings of ACM Motion, Interaction and Games. 2023. **Best Paper Honorable Mention**.
- [27] M. Derksen, J. Becker, M. F. Elahi, A. Maier, M. Maile, I. Pätzold, J. Penningroth, B. Reglin, M. Rothgänger, P. Cimiano, E. Schubert, S. Schwandt, T. Kuhlen, M. Botsch, and T. Weissker. *Who Did What When? Discovering Complex Historical Interrelations in Immersive Virtual Reality*. In: Proceedings of IEEE International Symposium on Mixed and Augmented Reality. 2023.
- [28] J. Becker, M. Botsch, P. Cimiano, M. Derksen, M. F. Elahi, A. Maier, M. Maile, I. O. Pätzold, B. Reglin, M. Rothgänger, and S. Schwandt. *Virtual Reality based Access to Knowledge Graphs for History Research*. In: Proceedings of International Conference on Semantic Systems. 2023.
- [29] M. Derksen, T. Weissker, T. Kuhlen, and M. Botsch. *Towards Discovering Meaningful Historical Relationships in Virtual Reality*. In: Proceedings of IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW). 2023.

- [30] N. Döllinger, M. Beck, E. Wolf, D. Mal, M. Botsch, M. E. Latoschik, and C. Wienrich. “*If It’s Not Me It Doesn’t Make a Difference*” – *The Impact of Avatar Personalization on User Experience and Body Awareness in Virtual Reality*. In: Proceedings of IEEE International Symposium on Mixed and Augmented Reality. 2023.
- [31] N. Döllinger, E. Wolf, M. Botsch, M. E. Latoschik, and C. Wienrich. *Are Embodied Avatars Harmful to our Self-Experience? The Impact of Virtual Embodiment on Body Awareness*. In: Proceedings of ACM CHI Conference on Human Factors in Computing Systems. 2023. **Best Paper Honorable Mention**.
- [32] P. Kullmann, T. Menzel, M. Botsch, and M. E. Latoschik. *An Evaluation of Other-Avatar Facial Animation Methods for Social VR*. In: Proceedings of ACM CHI Conference on Human Factors in Computing Systems (Extended Abstracts). 2023.
- [33] C. Roy, D. Wiebusch, M. Botsch, and M. Ernst. *Did it move? Humans use spatio-temporal landmark permanency efficiently for navigation*. In: Journal of Experimental Psychology 152.2 (2023).
- [34] A. Pontzen (née Bunge), P. Herholz, O. Sorkine-Hornung, M. Botsch, and M. Kazhdan. *Variational quadratic shape functions for polygons and polyhedra*. In: ACM Transaction on Graphics 41.4 (2022).
- [35] D. Bukenberger, K. Buchin, and M. Botsch. *Constructing L_∞ Voronoi Diagrams in 2D and 3D*. In: Computer Graphics Forum 41.5 (2022).
- [36] T. Menzel, M. Botsch, and M. E. Latoschik. *Automated Blendshape Personalization for Faithful Face Animations Using Commodity Smartphones*. In: Proceedings of ACM Symposium on Virtual Reality Software and Technology. 2022.
- [37] N. Döllinger, E. Wolf, D. Mal, S. Wenninger, M. Botsch, M. E. Latoschik, and C. Wienrich. *Resize Me! Exploring the user experience of embodied realistic modulatable avatars for body image intervention in virtual reality*. In: Frontiers in Virtual Reality 3 (2022).
- [38] E. Wolf, N. Döllinger, D. Mal, S. Wenninger, A. Bartl, M. Botsch, M. E. Latoschik, and C. Wienrich. *Does distance matter? Embodiment and perception of personalized avatars in relation to the self-observation distance in virtual reality*. In: Frontiers in Virtual Reality 3 (2022).
- [39] N. Döllinger, E. Wolf, D. Mal, N. Erdmannsdörfer, M. Botsch, M. E. Latoschik, and C. Wienrich. *Virtual Reality for Mind and Body: Does the Sense of Embodiment Towards a Virtual Body Affect Physical Body Awareness?* In: Proceedings of ACM CHI Conference on Human Factors in Computing Systems (Extended Abstracts). 2022.
- [40] E. Wolf, D. Mal, V. Frohnafel, N. Döllinger, S. Wenninger, M. Botsch, M. E. Latoschik, and C. Wienrich. *Plausibility and Perception of Personalized Virtual Humans between Virtual and Augmented Reality*. In: Proceedings of IEEE International Symposium on Mixed and Augmented Reality. 2022.
- [41] C. Frank, F. Hülsmann, T. Waltemate, D. J. Wright, D. L. Eaves, A. Bruton, M. Botsch, and T. Schack. *Motor imagery during action observation in virtual reality: the impact of watching myself performing at a level I have not yet achieved*. In: International Journal of Sport and Exercise Psychology 21.3 (2022).
- [42] A. Pontzen (née Bunge), M. Botsch, and M. Alexa. *The Diamond Laplace for Polygonal and Polyhedral Meshes*. In: Computer Graphics Forum 40.5 (2021).
- [43] M. Komaritzan, S. Wenninger, and M. Botsch. *Inside Humans: Creating a Simple Layered Anatomical Model from Human Surface Scans*. In: Frontiers in Virtual Reality 2 (2021).

- [44] A. Bartl, S. Wenninger, E. Wolf, M. Botsch, and M. E. Latoschik. *Affordable But Not Cheap: A Case Study of the Effects of Two 3D-Reconstruction Methods of Virtual Humans*. In: *Frontiers in Virtual Reality 2* (2021).
- [45] E. Wolf, N. Merdan, N. Döllinger, D. Mal, C. Wienrich, M. Botsch, and M. E. Latoschik. *The Embodiment of Photorealistic Avatars Influences Female Body Weight Perception in Virtual Reality*. In: *Proceedings of IEEE Virtual Reality and 3D User Interfaces*. 2021.
- [46] I. Arent, F. Schmidt, M. Botsch, and V. Dürr. *Marker-Less Motion Capture of Insect Locomotion With Deep Neural Networks Pre-trained on Synthetic Videos*. In: *Frontiers in Behavioral Neuroscience 15* (2021).
- [47] A. Pontzen (née Bunge), P. Herholz, M. Kazhdan, and M. Botsch. *Polygon Laplacian Made Simple*. In: *Computer Graphics Forum 39.2* (2020).
- [48] L. Kammann, S. Menzel, and M. Botsch. *A Compact Patch-Based Representation for Technical Mesh Models*. In: *Proceedings of Vision, Modeling and Visualization*. 2020. **Best Paper Award**.
- [49] S. Wenninger, J. Achenbach, A. Bartl, M. E. Latoschik, and M. Botsch. *Realistic Virtual Humans from Smartphone Videos*. In: *Proceedings of ACM Symposium on Virtual Reality Software and Technology*. 2020. **Best Paper Award**.
- [50] E. Wolf, N. Döllinger, D. Mal, C. Wienrich, M. Botsch, and M. E. Latoschik. *Body Weight Perception of Females using Photorealistic Avatars in Virtual and Augmented Reality*. In: *Proceedings of IEEE International Symposium on Mixed and Augmented Reality*. 2020.
- [51] L. Dehn, M. Piefke, M. Toepper, A. Kohsik, A. Rogalewski, E. Dyck, M. Botsch, and W.-R. Schäbitz. *Cognitive training in an everyday-like virtual reality enhances visual-spatial memory capacities in stroke survivors with visual field defects*. In: *Topics in Stroke Rehabilitation 27.6* (2020).
- [52] T. Schneider, J. Dumas, X. Gao, M. Botsch, D. Panozzo, and D. Zorin. *Poly-Spline Finite-Element Method*. In: *ACM Transaction on Graphics 38.3* (2019).
- [53] T. Gietzen, R. Brylka, J. Achenbach, K. zum Hebel, E. Schömer, M. Botsch, U. Schwanecke, and R. Schulze. *A method for automatic forensic facial reconstruction based on dense statistics of soft tissue thickness*. In: *PLoS ONE 14.1* (2019).
- [54] M. Komaritzan and M. Botsch. *Fast Projective Skinning*. In: *Proceedings of ACM SIGGRAPH Conference on Motion, Interaction and Games*. 2019.
- [55] M. E. Latoschik, F. Kern, J.-P. Stauffert, A. Bartl, M. Botsch, and J.-L. Lugrin. *Not Alone Here?! Scalability and User Experience of Embodied Ambient Crowds in Distributed Social Virtual Reality*. In: *IEEE Transactions on Visualization and Computer Graphics 25.5* (2019).
- [56] S. von Mammen, A. Müller, M. E. Latoschik, M. Botsch, K. Brukamp, C. Schröder, and M. Wacker. *VIA VR: A Technology Platform for Virtual Adventures for Healthcare and Well-Being*. In: *Proceedings of International Conference on Virtual Worlds and Games for Serious Applications (VS-Games)*. 2019.
- [57] F. Hülsmann, C. Frank, I. Senna, M. Ernst, T. Schack, and M. Botsch. *Superimposed Skilled Performance in a Virtual Mirror Improves Motor Performance and Cognitive Representation of a Full Body Motor Action*. In: *Frontiers in Robotics and AI 6* (2019).
- [58] R. Foerster, C. Poth, C. Behler, M. Botsch, and W. Schneider. *Neuropsychological assessment of visual selective attention and processing capacity with head-mounted displays*. In: *Neuropsychology 33.3* (2019).

- [59] T. Waltemate, D. Gall, D. Roth, M. Botsch, and M. E. Latoschik. *The Impact of Avatar Personalization and Immersion on Virtual Body Ownership, Presence, and Emotional Response*. In: IEEE Transactions on Visualization and Computer Graphics 24.4 (2018). **Best Paper Award**.
- [60] M. Komaritzan and M. Botsch. *Projective Skinning*. In: Proceedings of the ACM on Computer Graphics and Interactive Techniques 1.1 (2018).
- [61] M. Schröder, T. Waltemate, J. Maycock, T. Röhlig, H. Ritter, and M. Botsch. *Design and Evaluation of Reduced Marker Layouts for Hand Motion Capture*. In: Computer Animation and Virtual Worlds 29.6 (2018).
- [62] F. Hülsmann, J. P. Göpfert, B. Hammer, S. Kopp, and M. 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*. In: Computers & Graphics 76 (2018).
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- [3] M. Botsch, S. Hahmann, and S. Schaefer, eds. *Proceedings of Symposium on Solid & Physical Modeling 2016*. Computer Aided Design 78. Elsevier, 2016.
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TEACHING

COURSES AT TU DORTMUND UNIVERSITY

since 2020 Computer Graphics,
 Computer Animation,
 Geometric Modeling,
 Scientific Computing,
 Mathematics for Computer Science

COURSES AT BIELEFELD UNIVERSITY

2008–2020 Introduction to Computer Graphics,
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COURSES AT ETH ZURICH

2005–2008 Surface Representations and Geometric Modeling,
 Physically-Based Simulation in Computer Graphics

COURSES AT INTERNATIONAL CONFERENCES

- 2026 Sven Wagner, Astrid Bunge, Mario Botsch: *A Hands-On Introduction to Discrete Differential Operators on Polygon Meshes*, Eurographics
- 2023 Astrid Bunge, Marc Alexa, Mario Botsch: *Discrete Laplacians for General Polygonal and Polyhedral Meshes*, ACM SIGGRAPH Asia
- 2020 Mario Botsch, Daniel Sieger: *The Polygon Mesh Processing Library*, Eurographics Symposium on Geometry Processing
- 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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- 2006 Mario Botsch, Mark Pauly, Christian Rössl, Stephan Bischoff, Leif Kobbelt: *Full-day course on Geometric Modeling Based on Triangle Meshes*, Eurographics
- 2006 Mario Botsch, Mark Pauly, Christian Rössl, Stephan Bischoff, Leif Kobbelt: *Full-day course on Geometric Modeling Based on Triangle Meshes*, ACM SIGGRAPH
- 2006 Mario Botsch, Mark Pauly: *Full-day course on Efficient Geometric Modeling with Polygonal Meshes*, ETH Zürich Industry Course
- 2004 Stephan Bischoff, Mario Botsch, Leif Kobbelt: *Half-day course on Freeform shape representations for efficient geometry processing*, Shape Modeling International
- 2000 Leif Kobbelt, Stephan Bischoff, Mario Botsch, Kolja Kähler, Christian Rössl, Robert Schneider, Jens Vorsatz: *Full-day course on Geometric modeling based on polygonal meshes*, Eurographics

SUPERVISED PHD STUDENTS & POSTDOCS

- since 2024 Sven Wagner
- since 2023 Friedemann Runte
- since 2023 Gerrit Nolte
- since 2023 Fabian Kemper
- since 2021 Melanie Derksen
- since 2020 Timo Menzel

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2013–2018	Dr. Thomas Waltemate
2014–2019	Dr. Felix Hülsmann
2012–2020	Dr. Jascha Achenbach
2012–2018	Dr. Andreas Richter
2015–2017	Jan Philip Göpfert
2010–2016	Dr. Eduard Zell
2012–2015	Dr. Matthias Schröder
2009–2014	Dr. Daniel Sieger
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2006–2008	Dr. Simon Heinzle (co-supervised, ETH Zürich)

PRESS & PUBLICITY

2023	TV spot “ Mein Körper. Mein (Mehr-)Gewicht ” featuring project ViTraS <i>ARD Wissen</i>
2021	“Avatar aus Handy-Clips” Article in <i>Heise c’t 4/2021</i> TV spot about “Avatar-Maker to go” <i>WDR Lokalzeit</i>
2020	“ Informatik der Technischen Universität Dortmund entwickelt einen Avatar-Maker to go ” <i>TU Dortmund Press Release (No. 91/2020)</i>
2019	“ Avatare gegen Adipositas ” <i>Würzburg University Press Release</i> “Computermodell erspart Röntgen” Article in <i>Westfalenblatt</i> “ Neues Modell: Schädelform in 3D berechnen ” <i>Hochschule RheinMain Press Release (No. 2/2019)</i>
2018	TV spot about Virtual Avatars <i>WDR Lokalzeit</i>
2017	“In zehn Minuten zum Avatar” Article in <i>Westfalenblatt</i> “In zehn Minuten zum virtuellen Zwilling” Article in <i>Neue Westfälische</i> “ In zehn Minuten zum virtuellen Zwilling ” <i>Bielefeld University Press Release (No. 189/2017)</i>

- “Warum Zuschauer Comicfiguren lieben, aber schnell vergessen”
Bielefeld University Press Release (No. 35/2017)
- “In Cyberwelten fürs Überleben üben”
 Article in *Psychologie Heute* 03/2017.
- “Das visuelle Begreifen messen”
 Article in *Westfalenblatt*.
- 2016 “Virtual Reha-lity”
 Article in *Focus* 48/2016.
- “Kniebeugen mit dem Avatar”
 Article in *Focus Gesundheit* Dec/Jan 2016/17.
- “VR at the Olympics”
 Article in *Engineering and Technology Magazine (E&T)* 7/2016.
- “Der virtuelle Kick”
 Article in *Wunderwelt Wissen* 7/2016
- TV spot about ICSPACE project
WDR Lokalzeit
- “Perfektes Training im virtuellen Raum”
 Article in *Neue Westfälische*
- “Der intelligente virtuelle Trainingsraum”
 Article in *Westfalenblatt*
- “Intelligent Bewegung trainieren in der virtuellen Realität”
Bielefeld University Press Release (No. 23/2016)
- “ICSPACE: Bewegung trainieren in der virtuellen Realität”
research_tv video clip of Bielefeld University
- 2015 “Forscher der Universität Bielefeld entwickeln Design-Optimierungs-Software”
Bielefeld University Press Release (No. 118/2015)
- 2013 TV spot about CITmed project
WDR Lokalzeit
- “Reha im Supermarkt”
 Online article of *Gehirn & Geist*
- “Hirnschäden mit virtueller Realität therapieren”
Bielefeld University Press Release (No. 105/2013)
- 2011 “Maschinen lernen vom Menschen”
 Article in *Westfalenblatt*
- “Gespräche mit virtuellen Menschen”
 Article in *Neue Westfälische*
- 2010 “Reha im virtuellen Supermarkt”
 Article in *Westfalenblatt*
- “Universität Bielefeld erfolgreich im Ziel.NRW-Wettbewerb Hightech.NRW”
Bielefeld University Press Release (No. 51/2010)
- 2009 “Computerspiel, Trickfilm und Modellierung”
 Article in *Westfalenblatt*