Curriculum Vitae – Wolfgang Büschel

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Career Summary

April 2023	Ph.D. (summa cum laude) in computer science at TU Dresden *Reviewers:* Raimund Dachselt, Tim Dwyer *Thesis:* "Spatial Interaction for Immersive Mixed-Reality Visualizations"
2016 – 2023	Doctoral studies at TU Dresden, Chair of Multimedia Technology
Since May 2012	Research Associate at TU Dresden, Chair of Multimedia Technology
2010 – 2012	Master of Science (M.Sc.) in Computational Visualistics at Otto-von-Guericke University Magdeburg
2006 – 2010	Bachelor of Science (B.Sc.) in Computational Visualistics at Otto-von-Guericke University Magdeburg
2005	High-school diploma (Abitur) at Berufliche Schule Technik Schwerin, general qualification for university entrance

Awards

2018	ACM CHIIR 2018 Best Paper Award
2017	ACM ISS 2017 Best Demo Award
2014	IEEE ISMAR 2014 Best Paper Award DIS 2014 Honorable Mention Award
2012	ACM ITS 2012 Best Paper Award

Service

I have written more than 30 reviews for international conferences, such as ACM CHI,

ACM UIST, and IEEE VIS, and I received four special recognitions for my reviews.

I served as Proceedings Co-Chair for Mensch und Computer 2018. I was also a student volunteer at ISS 2017 and ITS 2014.

Since 2018, I have been an elected member of the Institute Council of the Institute of Software and Multimedia Technology. From 2018 to 2021, I also served as substitute representative to the Faculty Council of the Faculty of Computer Science at Dresden University of Technology.

Teaching & Student Supervision

I successfully supervised approx. 40 student theses, including bachelor, master and diploma theses. I have taught and supervised in approx. 30 seminars and practical courses.

Selected Courses

Seminars on Interactive Multimedia Technologies

Exercises Data Visualization, Advanced User Interfaces, and User Interface Engineering

Lab Projects on Multimedia Computer Science, Advanced User Interfaces, Interactive Multimedia Technologies, User Interface Engineering, Visualization and Interaction Techniques, and Interactive Visual Computing

Lectures on 3D User Interfaces, Immersive Visualization, and Quantitative User Studies

Assistance in creating slides for Advanced User Interface, User interface Engineering and Interactive Information Visualization

Grant Proposals

I assisted in writing the successful grant proposals of fastVPN (part of the "fast" cluster, BMBF) and CPEC - Center for Perspicuous Computing (Collaborative Research Center 248, DFG). I also helped with the defense of both phases of CPEC.

Scientific Publications

I have more than 30 international publications with more than 800 citations and an h-index of 15 (Google Scholar, August 2023). A full list is also available at https://www.imld.de/~bueschel.

Conference Full Papers

K. Krug*, **W. Büschel***, K. Klamka, and R. Dachselt. *"CleAR Sight: Exploring the Potential of Interacting with Transparent Tablets in Augmented Reality"*. In: Proceedings of the 21st IEEE International Symposium on Mixed and Augmented Reality. ISMAR '22. IEEE, 2022.

Both authors contributed equally.

W. Büschel, A. Lehmann, and R. Dachselt. *"MIRIA: A Mixed Reality Toolkit for the In-Situ Visualization and Analysis of Spatio-Temporal Interaction Data"*. In: Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems. CHI '21. ACM, Article 470, pages 1–15, 2021.

R. Langner, M. Satkowski, **W. Büschel**, and R. Dachselt. *"MARVIS: Combining Mobile Devices and Augmented Reality for Visual Data Analysis"*. In: Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems. CHI '21. ACM, Article 468, pages 1–17, 2021.

B. Ens, B. Bach, M. Cordeil, U. Engelke, M. Serrano, W. Willett, A. Prouzeau, C. Anthes, **W. Büschel**, C. Dunne, T. Dwyer, J. Grubert, J. H. Haga, N. Kirshenbaum, D. Kobayashi, T. Lin, M. Olaosebikan, F. Pointecker, D. Saffo, N. Saquib, D. Schmalstieg, D. Albers Szafir, M. Whitlock, Y. Yang. *"Grand Challenges in Immersive Analytics"*. In: Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems. CHI '21. ACM, Article 459, pages 1–17, 2021.

W. Büschel, A. Mitschick, T. Meyer, and R. Dachselt. *"Investigating Smartphone-based Pan and Zoom in 3D Data Spaces in Aug- mented Reality"*. In: Proceedings of the 21st International Conference on Human- Computer Interaction with Mobile Devices and Services. MobileHCI '19. ACM, pages 1-13, 2019.

A. Bluschke, **W. Büschel**, M. Hohmuth, F. Jehring, R. Kaminski, K. Klamka, S. Köpsell, A. Lackorzynski, T. Lackorzynski, M. Matthews, P. Rietzsch, A. Senier, P. Sieber, V. Ulrich, R. Wiggers, and J. Wolter. *"fastvpn – Secure and Flexible Networking for Industry 4.0"*. In: Broadband Coverage in Germany; 12. ITG-Symposium. VDE Verlag GmbH - Berlin - Offenbach, pages 28-35, 2018.

W. Büschel, A. Mitschick, and R. Dachselt. *"Here and Now: Reality-based Information Retrieval"*. In: Proceedings of the ACM SIGIR Conference on Human Information Interaction and Retrieval. CHIIR '18. ACM, pages 171-180, 2018.

W. Büschel, P. Reipschläger, R. Langner, and R. Dachselt. *"Investigating the Use of Spatial Interaction for 3D Data Visualization on Mobile Devices"*. In: Proceedings of the 2017 ACM International Conference on Interactive Surfaces and Spaces. ISS '17. ACM, pages 62-71, 2017.

U. v. Zadow, **W. Büschel**, R. Langner, and R. Dachselt. *"SleeD: Using a Sleeve Display to Interact with Touch-sensitive Display Walls"*. In: Proceedings of the 2014 ACM International Conference on Interactive Table- tops and Surfaces. ITS '14. ACM, pages 129-138, 2014.

K. Rohmer, **W. Büschel**, R. Dachselt, and T. Grosch. *"Interactive Near-field Illumination for Photorealistic Augmented Reality on Mobile Devices"*. In: 2014 IEEE International Symposium on Mixed and Augmented Reality. ISMAR '14. IEEE, pages 29-38, 2014.

J. D. Hincapié-Ramos, S. Roscher, **W. Büschel**, U. Kister, R. Dachselt, and P. Irani. *"tPad: Designing Transparent-Display Mobile Interactions"*. In: Proceedings of the 10th ACM Conference on Designing Interactive Systems. DIS '14. ACM, pages 161-170, 2014.

J. D. Hincapié-Ramos, S. Roscher, **W. Büschel**, U. Kister, R. Dachselt, and P. Irani. *"cAR: Contact Augmented Reality with Transparent-Display Mobile Devices"*. In: Proceedings of the 3rd International Symposium on Pervasive Displays. PerDis '14. Pages 80-85, 2014.

W. Büschel, U. Kister, M. Frisch, and R. Dachselt. *"T4 - Transparent and Translucent Tangibles on Tabletops"*. In: Proceedings of the 12th International Working Conference on Advanced Visual Interfaces 2014. AVI '14. ACM, pages 81-88, 2014.

M. Spindler, **W. Büschel**, and R. Dachselt. *"Use Your Head: Tangible Windows for 3D Information Spaces in a Tabletop Environment"*. In: Proceedings of the 2012 ACM International Conference on Interactive Tabletops and Surfaces. ITS '12. ACM, pages 245-254, 2012.

Journal Articles

W. Büschel, S. Vogt, and R. Dachselt. *"Augmented Reality Graph Visualizations: Investigation of Visual Styles in 3D Node-Link Diagrams"*. In: IEEE Computer Graphics and *Applications* Volume 39, Number 3. IEEE, pages 29-40, 2019.

Kai Rohmer, **W. Büschel**, R. Dachselt, and T. Grosch. *"Interactive Near-Field Illumination for Photorealistic Augmented Reality with Varying Materials on Mobile Devices"*. In: IEEE Transactions on Visualization and Computer Graphics. IEEE, pages 1349-1362, 2015.

M. Spindler, **W. Büschel**, C. Winkler, and R. Dachselt. *"Tangible displays for the masses: spatial interaction with handheld displays by using consumer depth cameras"*. In: Personal and Ubiquitous Computing. Springer London, pages 1213-1225, 2014.

Book Chapter

W. Büschel, J. Chen, R. Dachselt, S. Drucker, T. Dwyer, C. Görg, T. Isenberg, A. Kerren, C. North, W. Stuerzlinger. *"Interaction for Immersive Analytics"*. In: K. Marriott et al. (Eds.), Immersive Analytics. Springer International Publishing, pages 95-138, 2018.

Extended Abstracts of Posters and Demos

W. Büschel, A. Mitschick, and R. Dachselt. *"Demonstrating Reality-Based Information Retrieval"*. In: Proceedings of the 2018 CHI Conference Extended Abstracts on Human Factors in Computing Systems. CHI '18. ACM, pages D312:1-D312:4, 2018.

K. Klamka, **W. Büschel**, and R. Dachselt. *"Illuminated Interactive Paper with Multiple Input Modalities for Form Filling Applications"*. In: Proceedings of the 2017 ACM International Conference on Interactive Surfaces and Spaces. ISS '17. ACM, pages 434-437, 2017.

W. Büschel, P. Reipschläger, and R. Dachselt. *"Foldable3D: Interacting with 3D Content Using Dual-Display Devices"*. In: Proceedings of the 2016 ACM International Conference on Interactive Surfaces and Spaces. ISS '16. ACM, pages 367-372, 2016.

F. Matulic, **W. Büschel**, M. Yang, S. Ihrke, A. Ramraika, C. Rother, and R. Dachselt. *"Smart Ubiquitous Projection: Discovering Surfaces for the Projection of Adaptive Content"*. In: Proceedings of the 34th Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems. CHI EA '16. ACM, pages 2592-2600, 2016.

Workshop Papers

M. Satkowski, **W. Büschel**, and R. Dachselt. *"Experiences with User Studies in Augmented Reality"*. In: CHI 2021 Workshop on Evaluating User Experiences in Mixed Reality. CHI '21. 2021.

W. Büschel, G. Eckert, and R. Dachselt. *"Challenges in Collaborative Immersive Visualization"*. In: CHI 2020 Workshop on Immersive Analytics: Envisioning Future Productivity for Immersive Analytics. CHI '20. pages 1-6, 2020.

W. Büschel, S. Vogt, and R. Dachselt. *"Investigating Link Attributes of Graph Visualizations in Mobile Augmented Reality"*. In: CHI 2018 Workshop on Data Visualization on Mobile Devices. MobileVis '18 Workshop at CHI '18. 2018.

W. Büschel, P. Reipschläger, and R. Dachselt. *"Improving 3D Visualizations: Exploring Spatial Interaction with Mobile Devices"*. In: ISS 2016 Workshop Immersive Analytics: Exploring Future Interaction and Visualization Technologies for Data Analytics. ISS '16. ACM, 2016.

W. Büschel, R. Langner, U. v. Zadow, T. Horak, and R. Dachselt. *"Towards Cross-Surface Content Sharing Between Mobile Devices and Large Displays in the Wild"*. In: CHI 2016 Workshop on Interacting with Multi-Device Ecologies "in the Wild". CHI '16. 2016.

M. Frisch, U. Kister, **W. Büschel**, R. Langner, and R. Dachselt. *"Translucent Tangibles on Tabletops: Exploring the Design Space"*. In: CHI 2013 Workshop on Blended Interaction - Envisioning Future Collaborative Interactive Spaces. CHI '13. 2013.

W. Büschel, A. Viergutz, and R. Dachselt. *"Towards Interaction with Transparent and Flexible Displays"*. In: CHI 2013 Workshop on Displays Take New Shape: An Agenda for Future Interactive Surfaces. CHI '13. 2013.