

Georges Hattab

Curriculum Vitae

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Nationality: French. Born 2nd Sep. 1988

Artificial Intelligence, Data Mining, Visualization

Degrees

- 2022 **Habilitation (*Doctor habilitatus* or *Privatdozent*)**, Computer Science, Department of Mathematics and Computer Science, Philipps-Universität Marburg, Marburg, Germany, *scilicet* submitted (10.2021), *venia legendi* (11.2022).
- 2018 **PhD (*Doctor rerum naturalium*)**, Bioimage Informatics, Bioinformatics, Faculty of Technology, Universität Bielefeld, Bielefeld, Germany, *sc. s.* (09.2017), *viva voce* (05.2018).
- 2014 **Master of Science, Technology, Healthcare, Bioinformatics**, Université Paris VII, Denis Diderot, Université Sorbonne Paris Cité, Paris, France.
- 2012 **Bachelor of Science, Technology, Healthcare, Bioinformatics**, Université Paris VII, Denis Diderot, Université Sorbonne Paris Cité, Paris, France.

Education & Development

- 2023–2025 **Adjunct Professor of Computer Science (*Privatdozent*)**, Freie Universität Berlin, Department of Mathematics and Computer Science, Berlin, Germany.
- 2022–2025 **Research Group Leader**, Visualization Group. Center for Artificial Intelligence in Public Health Research, Zentrum für Künstliche Intelligenz in der Public Health-Forschung (ZKI-PH), Robert Koch Institute (RKI), Berlin/Wildau, Germany.
Develop computational solutions at the intersection of Visualization and Artificial Intelligence (AI) in the context of Public Health Research.
- 2019–2022 **Lecturer**, Philipps-Universität Marburg, Department of Mathematics and Computer Science, Marburg, Germany.
- 2019–2022 **Junior Research Group Leader**, Data Analytics and Visualization Group. Philipps-Universität Marburg, Department of Mathematics and Computer Science, Molecular Storage for Long term Archiving (MOSLA), Marburg, Germany.
Develop automatic workflows and visualizations for information storage systems that rely on molecular storage media.
- 2019–2022 **Head of Bioinformatics Division**, Data Science in Biomedicine Group. Philipps-Universität Marburg, Department of Mathematics and Computer Science, Marburg, Germany.
Machine Learning and Bioinformatics for Omics data. Advised by Prof. Dominik Heider

- 2018–2019 **Postdoctoral Researcher**, *National Center for Tumor Diseases (NCT), Deutsches Krebsforschungszentrum (DKFZ), University Hospital Carl Gustav Carus, Technische Universität, Dresden, Germany.*
Biomechanical analysis and computer vision for mixed reality of human organs in the field of computer- and robot-assisted surgery. Advised by Prof. Stefanie Speidel
- 2014–2017 **PhD**, *Universität Bielefeld, Biodata Mining Group, Computational Methods for the Analysis of the Diversity and Dynamics of Genomes (DiDy), German-Canadian DFG Int. Research Training Group, Bielefeld, Germany.*
Analyzing colony dynamics and visualizing cell diversity in spatiotemporal experiments. Supervised by Prof. Tim W. Nattkemper and Prof. Tamara Munzner
- 2016 **Visiting Graduate Student**, *Information Visualization Group, University of British Columbia (UBC), Vancouver, BC, Canada.*
Development of an efficient algorithm and data abstractions to analyze bacterial colony growth in time-lapse image data. Supervised by Prof. Tamara Munzner
- 2016 **Visiting Graduate Student**, *Database and Data Mining Group, School of Computing Science, Simon Fraser University (SFU), Burnaby, BC, Canada.*
Scientific exchange. Advised by Prof. Martin Ester
- 2014 **Master**, *Laboratoire Évolution, Génomes et Spéciation (LEGS), CNRS UPR 9034, Université Paris Denis Diderot, Gif-sur-Yvette, France.*
Detection and analysis of trajectory patterns of *Drosophila melanogaster* in a spatial system based on the Morris water maze. Supervised by Dr. Frederic Mery
- 2013 **Internship**, *Institut de Biologie Physico-Chimique (IBPC), CNRS UMR 7099, Université Paris Denis Diderot, Paris, France.*
Proteome and metabolome study of the bacterium strain C43(DE3) throughout membrane proliferation in *Escherichia coli*. Supervised by Prof. Bruno Miroux
- 2013 **Research Assistant**, *Necker-Enfants Malades Hospital, Necker Proteomics (PPN), Université Paris René Descartes, Inserm US 24 CNRS UMS 3633, Paris, France.*
Software deployment and data mining for label-free proteomics. Supervised by Dr. Chiara Guerrera
- 2012 **Bachelor**, *Institut de Biologie Physico-Chimique (IBPC), CNRS UMR 7099, Université Paris Denis Diderot, Paris, France.*
Establishment of a bibliographic and bioinformatics mining tool to research the over-expression of heterologous membrane proteins. Supervised by Prof. Bruno Miroux
- 2010 **Internship**, *Institut Jacques Monod (IJM), CNRS UMR 7592, Paris, France.*
Gene expression profiling and database creation to assess genetic regulations in iron homeostasis in *Saccharomyces cerevisiae*. Supervised by Dr. Denis Mestivier.

Further Experience

- 2023 **Workshop** 'Responsible and Open Foundation Models'. Princeton University. Stanford University. Online.
- 2023 **Workshop** 'Open Science for One Health'. Amano Grand Central. Berlin, Germany
- 2022 **Workshop** 'Bringing AI and Robotics to the Hospital'. Hospital Smart development based on AI. Eindhoven, Netherlands
- 2022 **Workshop** 'The 2nd Workshop on Visualization for Social Good.' IEEE VIS 2022. Oklahoma City, OK, USA

- 2021 **Workshop** 'The 11th Workshop on Visual Computing for Biology and Medicine.' The Eurographics Association. Paris, France
- 2021 **Workshop** 'Evidence-Based Approaches to Improve Your Teaching – Designing Assessments.' D. Meredith, P. Soto. The Biophysical Society
- 2020 **Workshop** on DNA, polymers and big data from the Transdisciplinary Technology and Health Meetings, 'Colloque ADN, polymères et big data.' CNRS and Académie des Technologies. Paris, France
- 2019 **Workshop** 'Computational Pan-Genomics.' Center for Interdisciplinary Research. J. Stoye, A. Schönhuth. Universität Bielefeld. Bielefeld, Germany
- 2019 **Workshop** 'Perceptual Capacities and Constraints in AR/VR for the visualization of 3D biomedical image data.' Computer Assisted Radiology and Surgery (CARS). R. Eagleson, U. Eck, G. Hattab, B. Preim. Rennes, France
- 2019 **Workshop** 'Surgical Data Science.' Le Couvent des Jacobins Center. L. Maier-Hein, P. Jannin, S. Speidel. Rennes, France
- 2017 **Springer Cover design** for 'Comparative Genomics: Methods and Protocols.' Stoye et al. 2017
- 2016 **Workshop** 'Algorithms for Comparative Genomics.' C. Chauve, J. Stoye. Simon Fraser University. Burnaby, Canada
- 2016 **Workshop** 'Academic Writing in Natural Sciences.' M. Gould. Universität Bielefeld. Bielefeld, Germany
- 2015 **Workshop** 'Intense Course on Data Mining and Visualization'. M. Ester, T.W. Natterkemper, and B. Hammer. Universität Bielefeld. Bielefeld, Germany
- 2015 **Workshop** 'Intense Course on Cancer Genomics.' R. Morin, Y. Wang, A. Cherkasov, S. Volik, R. Brinkman, A. Wyatt, S. Shah, and A. Bouchard. Simon Fraser University. Burnaby, Canada
- 2015 **Workshop** '13th Bioinformatics Research and Education Workshop (BREW).' University of Tartu. Tartu, Estonia
- 2015 **Workshop** 'Biodata Visualization and Subcellular localization'. W. Duddy, J. Krüger, S. Müller, and T. Wallmeyer. Universität Bielefeld. Bielefeld, Germany
- 2014 **Volunteer curator** for the United Nations Development Programme (UNDP). Lead curator and book designer for an international collaborative publication: Reversality
- 2012 **Volunteer curator** for the United Nations Children's Fund, UNICEF France. Lead curator and organizer for an international exhibition at PLÂTRE émoi. Paris, France
- 2011–2014 **Volunteer rescuer** at the French Red Cross (Croix-Rouge Française). Paris, France.

Publications

- 2025 **Pending**, *more information available on the [Publications page](#).*
- 2024 **Ilgen, B., Hattab, G.**, *Visualizing Evidence through Natural Language Interaction for Public Health Interventions*, ACM Natural Language Processing and Information Retrieval (NLPIR), (accepted).

- 2024 **Hattab, G., Anžel, A., Dubey, A., Ezekannagha, C., Yang, Z., ?lgen, B.,** *Persona Adaptable Strategies Make Large Language Models Tractable*, ACM Natural Language Processing and Information Retrieval (NLPPIR), (accepted).
- 2024 **İlgen, B., Hattab, G.,** *A Lexical Simplification Framework for Turkish*, ACM Natural Language Processing and Information Retrieval (NLPPIR), (accepted).
- 2024 **Ferreira, A. P. G., Anžel, A., Ullrich, A., Hattab, G.,** *Explorando o potencial da inteligência artificial na definição de síndromes (Abstract)*, Anais do Instituto de Higiene e Medicina Tropical, (accepted).
- 2024 **Dubey, A., Yang, Z., Hattab, G.,** *Five P's of XAI to Enable Human-Centric Trustworthy AI in Public Health (Abstract)*, Annual Meeting of American Public Health Association (APHA), (accepted).
- 2024 **Hattab, G., Irgang, C., Körber, N., Kühnert, D., Ladewig, K.,** *The Way Forward to Embrace Artificial Intelligence in Public Health*, American Journal of Public Health, doi.org/10.2105/AJPH.2024.307888.
- 2024 **Dubey, A., Yang, Z., Hattab, G.,** *AI Readiness in Healthcare Domain with Storytelling XAI*, ECAI Workshop on Explainable Artificial Intelligence for the Medical Domain (EXPLIMED), ceur-ws.org/Vol-3831.
- 2024 **Wehrli, S., Ezekannagha, C., Hattab, G., Boender, T. S., Arnrich, B., Irgang, C.,** *Guiding Sentiment Analysis with Hierarchical Text Clustering: Analyzing the German X/Twitter Discourse on Face Masks in the 2020 COVID-19 Pandemic*, ACL Workshop on Computational Approaches to Subjectivity, Sentiment, & Social Media Analysis (WASSA), Association for Computational Linguistics, aclanthology.org/2024.wassa-1.13.
- 2024 **Yang, Z., Dai, X., Yang, W., ?lgen, B., Anžel, A., Hattab, G.,** *Kernel-based Learning for Safe Control of Discrete-Time Unknown Systems under Incomplete Observations*, Chinese Control Conference (CCC), doi.org/10.23919/CCC63176.2024.10662288.
- 2024 **Yang, Z., Dong, S., Lederer, A., Dai, X., Chen, S., Sosnowski, S., Hattab, G., Hirche, S.,** *Cooperative Learning with Gaussian Processes for Euler-Lagrange Systems Tracking Control under Switching Topologies*, IEEE American Control Conference (ACC), 10.23919/ACC60939.2024.10644832.
- 2024 **Dubey, A., Yang, Z., Hattab, G.,** *Nested Model for AI Design and Validation*, iScience, doi.org/10.1016/j.isci.2024.110603.
- 2024 **Dai, X., Yang, Z., Xu, M., Zhang, S., Liu, F., Hattab, G., & Hirche, S.,** *Decentralized event-triggered online learning for safe consensus control of multi-agent systems with Gaussian process regression*, European Journal of Control, doi.org/10.1016/j.ejcon.2024.101058.
- 2024 **Weckbecker, M., Anžel, A., Yang, Z., Hattab, G.,** *Interpretable Molecular Encoding and Representation for Machine Learning Tasks*, Computational and Structural Biotechnology, doi.org/10.1016/j.csbj.2024.05.035.

- 2024 **Pilic, A., Falman, A., Külper-Schiek, W., Steffen, C., Mosina, L., İlgen, B., Hattab, G., Henaff, L., Harder, T.,** *SENSE: Stärkung nationaler Impfkommisionen und ihrer evidenzbasierten Entscheidungsprozesse in der WHO-Region Europa und global (Abstract)*, German Medical Science GMS Publishing House, doi.org/10.3205/24ebm019.
- 2024 **Yang, Z., Dai, X., Dubey, A., Hirche, S., Hattab, G.,** *Whom to Trust? Elective Learning for Distributed Gaussian Process Regression*, International Conference on Autonomous Agents and Multiagent Systems (AAMAS), doi.org/10.5555/3635637.3663066.
- 2023 **İlgen, B., Pilic, A., Harder, T., Hattab, G.,** *Pre-Training to Identify Immunization-Related Entities from Systematic Reviews*, ACM Natural Language Processing and Information Retrieval (NLPPIR), doi.org/10.1145/3639233.3639355.
- 2023 **Anžel, A., Heider, D., Hattab, G.,** *Interactive Polar Diagrams for Model Comparison*, Computer Methods and Programs in Biomedicine, doi.org/10.1016/j.cmpb.2023.107843.
- 2023 **Weckbecker, M., Neziri, S., Hattab, G.,** *Supporting Mathematical Education with Interactive Visual Proofs*, IEEE VIS Workshop on Visualization for Social Good (VIS4Good), doi.org/10.1109/VIS4Good60218.2023.00011.
- 2023 **Yin, Z., Dai, X., Yang, Z., Shen, Y., Hattab, G., Zhao, H.,** *Learning-based Control for PMSM Using Distributed Gaussian Processes with Optimal Aggregation Strategy*, Conference of the IEEE Industrial Electronics Society (IECON), doi.org/10.1109/IECON51785.2023.10312503.
- 2023 **Ezekannagha, C., Welzel, M., Heider, D., Hattab, G.,** *DNAsmart: Multiple Attribute Ranking Tool for DNA Data Storage Systems*, Computational and Structural Biotechnology, doi.org/10.1016/j.csbj.2023.02.016.
- 2023 **Hattab, G., Anžel, A., Spänig, S., Neumann, N., Heider, D.,** *A parametric approach for molecular encodings using multilevel atomic neighborhoods applied to peptide classification*, NAR genomics and bioinformatics, doi.org/10.1093/nargab/lqac103.
- 2022 **Hattab, G.,** *Ten Challenges and Explainable Analogs of growth functions and distributions for statistical literacy and fluency*, IEEE Workshop on Visualization for Social Good (VIS4Good), doi.org/10.1109/VIS4Good57762.2022.00006.
- 2022 **Sperlea, T., Heider, D., Hattab, G.,** *A Theoretical Basis for Bioindication in Complex Ecosystems*, Ecological Indicators, doi.org/10.1016/j.ecolind.2022.109050.
- 2022 **Ezekannagha, C., Becker, A., Heider, D., Hattab, G.,** *Sustainable Design for long-term Archiving of information with DNA as green Storage Medium*, Materials Today Bio, doi.org/10.1016/j.mtbio.2022.100306.
- 2022 **Kaya, G., Ezekannagha, C., Heider, D., Hattab, G.,** *Context-Aware Phylogenetic Trees for Phylogeny-based Taxonomy Visualization*, Frontiers in Genetics, doi.org/10.3389/fgene.2022.891240.
- 2022 **Anžel, A., Heider, D., Hattab, G.,** *MOVIS: A Multi-Omics Software Solution for Multi-modal Time-Series Clustering, Embedding, and Visualizing Tasks*, Computational and Structural Biotechnology, doi.org/10.1016/j.csbj.2022.02.012.

- 2022 **Sperlea, T., Schenk, J.P., Dreßler, H., Beisser, D., Hattab, G., Boenigk, J., Heider, D.,** *The relationship between land cover and microbial community composition in European lakes*, Science of the Total Environment, doi.org/10.1016/j.scitotenv.2022.153732.
- 2021 **Hattab, G.,** *Data Abstractions for Visual Analytics in Computational Life Sciences*, (Habilitation).
- 2021 **Hannah, L. F., Welzel, M., Hattab, G., Hauschild, A. C., Heider, D.,** *Fractal Construction of Constrained Code Words for DNA Storage Systems*, Nucleic Acids Research, doi.org/10.1093/nar/gkab1209.
- 2021 **Martin, R., Dressler, H., Hattab, G., Hackl, T., Fischer, M. G., & Heider, D.,** *MOSGA 2: Comparative Genomics and Validation Tools*, Computational and Structural Biotechnology, doi.org/10.1016/j.csbj.2021.09.024.
- 2021 **Anžel, A., Heider, D., Hattab, G.,** *The Visual Story of Data Storage: From Storage Properties to User Interfaces*, Computational and Structural Biotechnology Journal, 19, 4904, doi.org/10.1016/j.csbj.2021.08.031.
- 2021 **Arnold, M., Speidel, S., Hattab, G.,** *Towards improving edge quality using combinatorial optimization and a novel skeletonize algorithm*, BMC Medical Imaging, 21 (1), 1-9, doi.org/10.1186/s12880-021-00650-z.
- 2021 **Hattab, G., Hatzipanayioti, A., Klimova, A., Pfeiffer, M., Klausning, P., Breucha, M., . . . , & Speidel, S.,** *Investigating the utility of VR for spatial understanding in surgical planning: Evaluation of head-mounted to desktop display*, Scientific Reports, 11(1), 1-11, doi.org/10.1038/s41598-021-92536-x.
- 2021 **Spänig, S., Mohsen, S., Hattab, G., Hauschild, A. C., & Heider, D.,** *A large-scale comparative study on peptide encodings for biomedical classification*, NAR genomics and bioinformatics, 3(2), doi.org/10.1093/nargab/lqab039.
- 2021 **Sperlea, T., Kreuder, N., Beisser, D., Hattab, G., Boenigk, J., & Heider, D.,** *Quantification of the covariation of lake microbiomes and environmental variables using a machine learning-based framework*, Molecular Ecology, 30(9), 2131-2144, doi.org/10.1111/mec.15872.
- 2021 **Wagner, D., Heider, D., & Hattab, G.,** *Mushroom data creation, curation, and simulation to support classification tasks*, Scientific reports, 11(1), 1-12, doi.org/10.1038/s41598-021-87602-3.
- 2021 **Hattab, G., Rhyne, T. M., & Heider, D.,** *Correction: Ten simple rules to colorize biological data visualization*, PLoS Computational Biology, 17(4), doi.org/10.1371/journal.pcbi.1008901.
- 2021 **Hufsky, F., Lamkiewicz, K., Almeida, A., Aouacheria, A., Arighi, C., Bateman, A., . . . , Hattab, G., . . . & Marz, M.,** *Computational strategies to combat COVID-19: useful tools to accelerate SARS-CoV-2 and coronavirus research*, Briefings in bioinformatics, 22(2), 642-663., doi.org/10.1093/bib/bbaa232.
- 2020 **Martin, R., Hackl, T., Hattab, G., Fischer, M. G., & Heider, D.,** *MOSGA: Modular Open-Source Genome Annotator*, Bioinformatics, 36 (22-23), 5514-5515, doi.org/10.1093/bioinformatics/btaa1003.

- 2020 **Hattab, G., Rhyne, T. M., & Heider, D.,** *Ten simple rules to colorize biological data visualization*, PLoS Computational Biology, 16(10), doi.org/10.1371/journal.pcbi.1008259.
- 2020 **Martin, R., Löchel, H. F., Welzel, M., Hattab, G., Hauschild, A. C., & Heider, D.,** *CORDITE: the curated CORona drug InTERactions database for SARS-CoV-2*, lscience, 23(7), 101297, doi.org/10.1016/j.isci.2020.101297.
- 2020 **Hattab, G., Ahlfeld, T., Klimova, A., Koepp, A., Schuerer, M., & Speidel, S.,** *Uniaxial compression testing and Cauchy stress modeling to design anatomical silicone replicas*, Scientific Reports, 10(1), 1-7, doi.org/10.1038/s41598-020-68886-3.
- 2020 **Hattab, G., Ahlfeld, T., Klimova, A., Koepp, A., Schuerer, M., & Speidel, S.,** *Data from Uniaxial Compression testing and validation scripts for Cauchy stress modeling to design anatomical silicone replicas*, 10.24435/materialscloud:2020.0019/v2.
- 2020 **Hattab, G., Riediger, C., Weitz, J., & Speidel, S.,** *A case study: impact of target surface mesh size and mesh quality on volume-to-surface registration performance in hepatic soft tissue navigation*, International journal of computer assisted radiology and surgery, 15(8), 1235-1245, doi.org/10.1007/s11548-020-02123-0.
- 2020 **Hattab, G., Arnold, M., Strenger, L., Allan, M., Arsentjeva, D., Gold, O., ... & Speidel, S.,** *Kidney edge detection in laparoscopic image data for computer-assisted surgery*, International journal of computer assisted radiology and surgery, 15(3), 379-387, doi.org/10.1007/s11548-019-02102-0.
- 2020 **Hattab, G., Meyer, F., Albrecht, R. D., & Speidel, S.,** *MODELAR: A MODular and EvaLuative framework to improve surgical Augmented Reality visualization*, The Eurographics Association, Eurographics & Eurovis 2020, 10.2312/evs.20201066.
- 2019 **Hattab, G., & Nattkemper, T. W.,** *SeeVis-3D space-time cube rendering for visualization of microfluidics image data*, Bioinformatics, 35(10), 1802-1804, doi.org/10.1093/bioinformatics/bty889.
- 2018 **Hattab, G.,** *Analyzing colony dynamics and visualizing cell diversity in spatiotemporal experiments*, Universität Bielefeld, (PhD, Doctor rerum naturalium).
- 2018 **Hattab, G., Wiesmann, V., Becker, A., Munzner, T., & Nattkemper, T. W.,** *A novel Methodology for characterizing cell subpopulations in automated Time-lapse Microscopy*, Frontiers in bioengineering and biotechnology, 6, 17, doi.org/10.3389/fbioe.2018.00017.
- 2017 **Hattab, G., Schlüter, J. P., Becker, A., & Nattkemper, T. W. ,** *ViCAR: an adaptive and landmark-free registration of time lapse image data from microfluidics experiments*, Frontiers in genetics, 8, 69, doi.org/10.3389/fgene.2017.00069.
- 2016 **Hattab, G., Brink, B. G., & Nattkemper, T. W.,** *A mnemonic card game for your amino acids*, Emily Carr University of Art+Design, 1, 48, Information+ Conference.
- 2015 **Hattab, G., Warschawski, D. E., Moncoq, K., & Miroux, B.,** *Escherichia coli as host for membrane protein structure determination: a global analysis*, Scientific reports, 5(1), 1-10, doi.org/10.1038/srep12097.
- 2015 **Schlueter, J. P., McIntosh, M., Hattab, G., Nattkemper, T. W., & Becker, A.,** *Phase Contrast and Fluorescence Bacterial Time-Lapse Microscopy Image Data*, Universität Bielefeld, doi.org/10.4119/unibi/2777409.

- 2014 **Hattab, G., Moncoq, K., Warschawski, D., & Miroux, B.**, *Escherichia coli as host for membrane protein structure determination: A global analysis.*, Biophysical Journal, 106(2), 46a (abstract), doi.org/10.1016/j.bpj.2013.11.335.
- 2014 **Hattab, G.**, *Pattern recognition in a heat maze based spatial system adapted to Drosophila melanogaster*, Université Paris-Saclay. Université Paris Denis Diderot, (Master of Science).
- 2012 **Hattab, G.**, *Establishment of a bibliographic and bioinformatics mining tool to research the over-expression of heterologous membrane proteins*, Institute of Biological Physical Chemistry. Université Paris Denis Diderot, (Bachelor of Science).

Books

- 2022 **Marey, E. J.**, *The Graphic Method, La Méthode Graphique*, Information Graphic Visionaries, Translated and edited by Hattab, G. Co-edited by Andrews, R. J., Visionary Press. ISBN: 979-8-9861945-2-3.
- 2015 **Hattab, G., Bahram, B., Nazar Pastor, K.**, *Reversality*, Lulu, Photobook archive. Center for Contemporary Art, Tehran, Iran. The International Center of Photography, New York, NY, USA.
- 2014 **Hattab, G., Suisse, A. Y., Illoaia, O., Casiraghi, M., Dezi, M., Warnet, X. L. ... & Miroux, B.**, *Membrane protein production in Escherichia coli: overview and protocols. Membrane Proteins Production for Structural Analysis*, Springer, 87-106, doi.org/10.1007/978-1-4939-0662-8_4.

Selected Conferences

- 2024 The 8th Natural Language Processing and Information Retrieval Conference (NLPIR). Okayama, JP (three proceedings papers)
- 2024 American Control Conference (ACC). Toronto, CA (proceedings paper)
- 2024 The 23rd International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS). Auckland, NZ (proceedings paper)
- 2023 IEEE Conference on Decision and Control (CDC). Marina Bay Sands, Singapore, SG (proceedings paper)
- 2023 IEEE Visualization Conference (VIS). Melbourne, AU (proceedings paper)
- 2022 IEEE VIS. Oklahoma City, OK, USA (proceedings paper)
- 2022 The 1st International Conference on Data Storage in Molecular Media (DSMM). Marburg, Germany. Virtual (organizer)
- 2021 IEEE VIS. New Orleans, LA, USA (attendee)
- 2021 The 29th German Conference on Bioinformatics (GCB). Virtual (proceedings paper)
- 2020 Physics-Biology Interface. French National Alliance for Life Sciences and Health (Aviesan). Paris, FR (attendee)
- 2020 IEEE VIS. Salt Lake City, UT, USA (attendee)
- 2020 The 28th GCB. Frankfurt, DE (two proceedings papers)
- 2020 Eurographics & Eurovis (EGEV) 2020. Norrköpping, SE (proceedings paper)

- 2019 The 33rd International Conference on Computer Assisted Radiology and Surgery (CARS). Rennes, FR (workshop talk and co-organizer)
- 2018 The 9th International Conference on Information Processing in Computer-Assisted Interventions (IPCAI). Berlin, DE (event assistant)
- 2016 IEEE VIS. Baltimore, MD, USA (attendee)
- 2016 Information+ conference. Emily Carr University. Vancouver, BC, CA (highlight talk and exhibition)
- 2015 The 7th Gender summit (GS7): Mastering gender in research performance, contexts, and outcomes. Berlin, DE (attendee)
- 2015 Membrane Protein Structures 2015 Meeting (MPS): Advance Photon Source. Argonne National Laboratory. Lemont, IL, USA (abstract in proceedings)
- 2014 The 22nd German Conference on Bioinformatics (GCB). Bielefeld, DE (attendee)
- 2014 The 1st DYNAMO Labex Symposium: Evolution, biogenesis and dynamics of energy transducing membranes. Oceanographic Institute. Paris, FR (poster)
- 2014 Biophysical Society: The 58th Annual Meeting. Biophys J 106 (2, Suppl 1): 46a. San Francisco, CA, USA (poster and abstract in proceedings)
- 2013 Bioenergetics: Gordon Research Conferences. Proctor Academy. Andover, NH, USA (highlight talk).

Invited Communications

Verbal

- 2023 **Lecture** 'Artificial Intelligence in Public Health Research: Current status and future opportunities.' Business Administration. Department of Information Systems. Freie Universität Berlin. Berlin, Germany
- 2023 **Lecture** 'Imagine All the People and Machines: How Improved Human and Machine Representations Can Drive Progress.' The 2nd Future Bioinformatics Workshop. Herborn Castle Meeting House and Theological Seminary. Herborn, Germany
- 2023 **Lecture** 'Computing Technologies in Medicine: Artificial Intelligence (AI) as a Computing Technology' Department of Psychiatry and Psychotherapy. Ludwig Maximilian University of Munich. Munich, Germany
- 2022 **Lecture** 'Causality in Machine Learning.' Department of Mathematics and Computer Science, Philipps-Universität Marburg. Marburg, Germany
- 2021 **Colloquium** 'Hidden Data Facets in Bioinformatics.' Colloquium for Bioinformatics and Systems Biology. Kolloquium für Bioinformatik und Systembiologie Mittelhessen (KoBiS). University of Applied Sciences Middle Hesse. Giessen, Germany
- 2019 **Lecture** 'Visual Computing.' Institute of Simulation and Graphics (ISG), Otto-von-Guericke-Universität Magdeburg. H. Theisel, B. Preim. Magdeburg, Germany
- 2019 **Workshop** 'The 9th Summer School on Surgical Robotics.' Laboratory of Computer Science, Robotics and Microelectronics Laboratory of Computer Science, Robotics and Microelectronics (LIRMM), CNRS. P. Poignet, N. Zemiti. Montpellier, France

- 2019 **Workshop** 'Perceptual Capacities and Constraints in AR/VR for the visualization of 3D biomedical image data.' The 33rd International Conference on Computer Assisted Radiology and Surgery (CARS). R. Eagleson, G. Hattab, B. Preim, U. Eck. Rennes, France
- 2015 **Lecture** 'Interdisciplinary vue d'ensemble.' At the Interface of Science and Art, Art 101. Department of Art, University of Oregon. F. Bahram. Eugene, OR, USA.
- Written
- 2021 **Article** 'A Snapshot View of IEEE Visualization (VIS) 2021.' ACM SIGGRAPH. T. M. Rhyne. G. Hattab. blog.siggraph.org
- 2020 **Article** 'A Snapshot View of IEEE Visualization (VIS) 2020.' ACM SIGGRAPH, the international Association for Computing Machinery's Special Interest Group on Computer Graphics and Interactive Techniques. T. M. Rhyne, G. Hattab. blog.siggraph.org

Teaching

Freie Universität Berlin. Berlin, Germany

- 2024–2025 **Lecture and Practical** Advanced Data Visualization for Artificial Intelligence (19336901, 19336902). 2 Semesters (Sem.)
- 2024–2025 **Seminar** Representation Learning (19337211). 1 Sem.
- 2024–2025 **Seminar** Visualization for Artificial Intelligence Explainability (19336311). 1 Sem.
- 2023 **Seminar** Biological Data Visualization (19334111). 1 Sem.
- 2023 **Seminar** Visual Computing with Information Theory (19333211). 1 Sem.

Philipps-Universität Marburg. Marburg, Germany

- 2020–2022 **Lecture and Practical** Data Visualization. (LV-12-079-333, LV-12-079-334). Bilingual (EN/DE). 4 Sem.
- 2020–2022 **Seminar** Biological Data Visualization. (LV-12-079-350). 3 Sem.
- 2021–2022 **Seminar** Information Theory Tools for Visual Computing. (LV-12-079-354). 2 Sem.

Universität Bielefeld. Bielefeld, Germany

- 2015–2016 **Seminar** Visualization approaches for biological data (BioVITAL). 2 Sem.

Advising & Supervision

Freie Universität Berlin. Berlin, Germany

- Chisom Ezekannagha, Postdoc. Computer Science (CS), 12.2026 (Advisor or A)
- Aleksandar Anžel, Postdoc. CS, 09.2026 (A, tentative)
- Ana Paula Gomes Ferreira, Ph.D. CS, 09.2026 (tentative)
- Jannis Köckritz, Ph.D. CS, 09.2026 (tentative)
- Vincent Schilling, Ph.D. CS, 09.2026 (tentative)
- Akshat Dubey, Ph.D. CS, 07.2026 (tentative)
- Andre Jatmiko Wijaya, Ph.D. CS, 06.2026 (tentative)
- Ebenezer Oladimeji Awotoro, Ph.D. CS, 09.2026 (tentative)

Marina Milad, Ph.D. CS, 09.2026 (A, tentative)
 Bahar Ilgen, Postdoc. Computer Science (CS), 12.2025 (A, tentative)
 Henry El-Jawhari, Intern. CS, 12.2025 (tentative)
 Zewen Yang, Postdoc. Computer Science (CS), 12.2024 (A)
 Blessy Rajan, Intern. CS, 02.2024
 Florian Suhre, M.Sc. CS, 01.2024
 Ebenezer Oladimeji Awotoro, Research Assistant, 09.2024
 Moritz Weckbecker, Research Assistant, 09.2023
 Philipps-Universität Marburg. Marburg, Germany
 Chisom Ezekannagha, Ph.D. CS, 02.2024
 Aleksandar Anžel, Ph.D. CS, 12.2023
 Dilekcan Pamir, Research Project. CS, 10.2023
 Xiao Langlotz, B.Sc. CS, 09.2023
 Florian Schwarz, M.Sc. CS, 07.2023
 Minh Nguyen, M.Sc. Business Informatics (BI), 04.2023
 Ihsan Tri Heldian, Student Assistant, 04.2023
 Liu Chang, M.Sc. BI, 12.2022
 Marius Welzel, Ph.D. CS, 12.2022 (A)
 Florian Schwarz, CS Projektarbeit, 11.2022
 Xiao Chu, CS Fortgeschrittenenpraktikum (FoPra), 10.2022
 David Sonnabend, CS Projektarbeit, 10.2022
 Khawla Elhadri, CS Projektarbeit, 10.2022
 Samuel Becker, CS Projektarbeit, 10.2022
 Felix Klein, CS Projektarbeit, 10.2022
 Raffael Schön, CS Projektarbeit, 10.2022
 Leon Wimbles, CS Projektarbeit, 10.2022
 Lucas Staus, CS Projektarbeit, 10.2022
 Fabio Rougier, M.Sc. CS, 10.2022
 Solida Neziri, B.Sc. CS, 10.2021
 Yin Lanhan, M.Sc. BI, 10.2022
 Jing Chen, B.Sc. BI, 10.2022
 Roman Martin, Ph.D. CS, 07.2022 (A)
 Gizem Kaya, B.Sc. BI, 10.2021
 Theodor Sperlea, Ph.D. Natural Sciences, 09.2021 (A)
 Freya Siv Dorn, B.Sc. CS, 04.2021
 Sandra Clemens, CS Projektarbeit, 06.2021
 Nils Neumann, M.Sc. CS, 11.2020
 Johannes Tauscher, B.Sc. CS, 10.2020
 Dennis Wagner, B.Sc. CS, 09.2020

University Hospital Carl G. Carus, Technische Universität. Dresden, Germany

Felix Meyer, CS Projektarbeit, 12.2019

Remke Dirk Albrecht, CS Projektarbeit, 12.2019

Peter Klausing, Student Assistant, 12.2019

Ljupka Titizova, CS Projektarbeit, 11.2019

Oliver Gold, B.Sc. CS, 10.2019

Oliver Gold, CS Projektarbeit, 07.2019

Marvin Arnold, CS Projektarbeit, 07.2019

Leon Strenger, CS Projektarbeit, 07.2019

Darja Arsentjeva, CS Projektarbeit, 07.2019

Lena Denne, CS Projektarbeit, 07.2019

Alexander Koepp, Medical Projektarbeit, 10.2018

Refereeing Services, Scientific Committees and Societies

Reviewer

2014–2025 *Elsevier Journal of Computational Science, Eurovis Eurographics, F1000Research, BMC Bioinformatics, BMC Biodata Mining, Digital Discovery, IEEE Conference on Decision and Control, IEEE Transactions on Visualization and Computer Graphics, Oxford Bioinformatics, PLOS One, PLOS Computational Biology, Springer International Journal of Computer Assisted Radiology and Surgery, Springer Nature Communications Engineering, Springer Nature Scientific Reports, Springer Science Information China.*

Committees

- 2025 **Program committee**, The 33rd German Conference on Bioinformatics (GCB), Düsseldorf, Germany
- 2024 **Habilitation Committee**, H. Richard, Department of Mathematics and Computer Science. Freie Universität Berlin. Berlin, Germany
- 2024 **PhD committee**, Visual Analytics Approaches to Genomic Data Representation: From Molecular Storage to Multidimensional Projection by Chisom Ezekannagha. Philipps-Universität Marburg. Marburg, Germany
- 2023 **PhD committee**, A Tale of Two Approaches: Comparing Top-Down and Bottom-Up Strategies for Analyzing and Visualizing High-Dimensional Data by Aleksandar Anžel. Philipps-Universität Marburg. Marburg, Germany
- 2023 **PhD committee**, Interpretable Machine Learning for real-world application by Olivera Stojanovic. Universität Osnabrück. Osnabrück, Germany
- 2022 **Program committee**, VisGuides Workshop, the 4th Workshop on Visualization Guidelines in Research, Design, and Education, IEEE VIS. Oklahoma City, OK, USA
- 2021–2022 **Habilitation Committee**, M. C. Thrun, Department of Mathematics and Computer Science. Philipps-Universität Marburg. Marburg, Germany
- 2015–2016 **Student Representative**, Graduate school ‘Computational Methods for the Analysis of the Diversity and Dynamics of Genomes’, Universität Bielefeld. Bielefeld, Germany.

Societies

- 2024–2025 **Editorial board**, Nature Computational Science, Springer Nature Group
- 2022–2025 **Editorial board**, Nature Scientific Reports (*Sci Rep*), Springer Nature Group
- 2022–2025 **Full member**, The German Association of University Professors and Lecturers, Deutscher Hochschulverband (DHV), Bonn, Germany
- 2021–2025 **Full member**, The Scientific Research Honor Society, *Sigma Xi*. Research Triangle Park. Morrisville, NC, USA
- 2021–2022 **Scientific board**, Center for Synthetic Microbiology, *Zentrum für Synthetische Mikrobiologie (SYNMIKRO)*, Philipps-Universität Marburg. Marburg, Germany
- 2019–2021 **Editorial board**, Nightingale, The Journal of the Data Visualization Society
- 2016–2017 **Member**, IEEE, Institute of Electrical and Electronics Engineers.

Programming

Python, Perl, C, C++, Mathematica, PL/PGSQL, PostgreSQL, xHTML, PHP, Javascript, R, \LaTeX , ConTeXt.

Languages

French	native speaker	–
English	near native	CEFR (C2)
German	very good command	CEFR (B2)

References

Prof. Dr. Dominik Heider	dominik.heider@uni-marburg.de
Theresa-Marie Rhyne	theresamarierhyne@gmail.com
Prof. Dr. Tim W. Nattkemper	tim.nattkemper@uni-bielefeld.de
Prof. Dr. Tamara Munzner	tmm@cs.ubc.ca
Prof. Dr. Jens Stoye	jens.stoye@uni-bielefeld.de
Prof. Dr. Bruno Miroux	bruno.miroux@ibpc.fr