Georges Hattab

Curriculum Vitae

Ludwig-Witthöft-Str. 14
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hattabg@rki.de
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Nationality: French. Born 2nd Sep. 1988

Research Interests: Data Mining, Data Science, Artificial Intelligence, Visualization

Degrees

2022 **Habilitation (*Doctor habil*), 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

2022 **Research Group Leader**, *Visualization Group. Center for Artificial Intelligence in Public Health, Zentrum für Künstliche Intelligenz in der Public Health-Forschung (ZKI-PH), Robert Koch Institute (RKI)*, Berlin/Wildau, Germany.

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.
Developing 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. Supervised 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, 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 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 overexpression 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

2022 **Workshop** 'Bringing AI and Robotics to the Hospital'. Hospital Smart development based on AI. Eindhoven, NL

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. Nattkemper, 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

2022 **Ezekannagha, C., Welzel. M., Heider, D., Hattab, G.**, *DNAsmart: Multiple Attribute Ranking Tool for DNA Data Storage Systems*, GigaScience, (under review).

2022 **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, (in revision).

2022 **Hattab, G.**, *Ten Challenges and Explainable Analogs of growth functions and distributions for statistical literacy and fluency*, IEEE Transactions on Visualization and Computer Graphics (2022), (accepted for IEEE VIS 2022).

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., Klausing, 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*, Iscience, 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, 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., Ilioaia, 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

2022 IEEE Visualization Conference (VIS). Oklahoma City, OK, USA (paper in proceedings)

2022 The 1st International Conference on Data Storage in Molecular Media (DSMM). Virtual (organizer)

2021 IEEE Visualization Conference (VIS). New Orleans, LA, USA (attendee)

2021 The 29th German Conference on Bioinformatics (GCB). Virtual (co-author one paper in proceedings)

2020 Physics-Biology Interface. French National Alliance for Life Sciences and Health (Aviesan). Paris, France (attendee)

2020 IEEE Visualization Conference (VIS). Salt Lake City, UT, USA. (attendee)

2020 The 28th German Conference on Bioinformatics (GCB). Frankfurt, Germany (co-author two papers in proceedings)

2020 Eurographics & Eurovis (EGEV) 2020. Norrköpping, SE (paper in proceedings)

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 Visualization Conference (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

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

Philipps-Universität Marburg. Marburg, Germany

2020-2022 **Lecture** Data Visualization. Bilingual (EN/DE). Four consecutive semesters (4 SEM)

2020-2022 **Seminar** Biological Data Visualization. 3 SEM

2021-2022 **Seminar** Information Theory Tools for Visual Computing. 2 SEM

Universität Bielefeld. Bielefeld, Germany

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

Advising & Supervision

Philipps-Universität Marburg. Marburg, Germany

Aleksandar Anžel, Ph.D. Computer Science (CS), 12.2023 (tentative)

Chisom Ezekannagha, Ph.D. CS, 12.2023 (tentative)

Dilekcan Pamir, B.Sc. CS, 10.2023 (tentative)

Marius Welzel, Ph.D. CS, 12.2022 (Advisor or A, tentative)

Bianca Thiel, M.Sc. CS, 7.2023 (tentative)

Minh Nguyen, M.Sc. Business Informatics (BI), 4.2023 (tentative)

Ihsan Tri Heldian, Research Assistant, 12.2022

Liu Chang, M.Sc. BI, 11.2022

Florian Schwarz, CS Projektarbeit, 11.2022

Chu Xiao, 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 Wimbes, 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 Science, 9.2021 (A)
Sandra Clemens, CS Projektarbeit, 6.2021
Nils Neumann, M.Sc. CS, 11.2020
Johannes Tauscher, B.Sc. CS, 10.2020
Dennis Wagner, B.Sc. CS, 9.2020

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

Ljupka Titizova, CS Projektarbeit, 11.2019
Oliver Gold, B.Sc. Computer Science, 9.2019
Alexander Koepp, Medical Projektarbeit, 10.2018

Departmental Work

Committees

2021–2022 **Habilitation committee**, M. C. Thrun, Department of Mathematics and Computer Science. Philipps-Universität Marburg. Marburg, Germany

Administration

2015–2016 **Student Representative**, Graduate school 'Computational Methods for the Analysis of the Diversity and Dynamics of Genomes', Universität Bielefeld. Bielefeld, Germany.

Refereeing Services, Scientific Committees and Societies

Reviewer

2014–2022 *Oxford Bioinformatics, BMC Bioinformatics, BMC Biodata Mining, PLOS Computational Biology, Springer Science Information China, Elsevier Journal of Computational Science, Springer International Journal of Computer Assisted Radiology and Surgery, Eurovis Eurographics, IEEE Transactions on Visualization and Computer Graphics, F1000Research.*

Committees and Societies

2022 **Editorial board**, Scientific Reports *(Sci Rep)*, Nature Publishing Group, Nature

2022 **Program committee**, VisGuides Workshop, the 4^{th} *Workshop on Visualization Guidelines in Research, Design, and Education*, IEEE VIS. Oklahoma City, OK, USA

2021–2022 **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.

Funding

2022 **Robert Koch Institute**, *Special Research Grant Applications, SonderForschungsmittelanträge (SoFo)*, Improving the representation of parametric approach to molecular encoding for ML tasks in Biomedicine, Wildau, Germany. (Postdoctoral position).

2021-2022 **Center for Interdisciplinary Research**, *Zentrum für interdisziplinäre Forschung (ZiF)*, the 1st International Conference on Data Storage in Molecular Media (DSMM), Bielefeld, Germany, (funding awarded to organize the conference).

2019 **Intuitive Surgical Inc.**, *CARS Conference*, Rennes, France, (sponsorship awarded for the AR/VR 3D biomedical image data visualization workshop).

Awards

2017–2018 **Jump-start position**, *Bielefeld University, DFG GRK 1906*, Bielefeld, Germany, Funded position awarded to transition from a PhD to a Postdoctoral position.

2015 **Ryoichi Sasakawa Young Leaders Fellowship Fund (Sylff)**, *Bahram, F., Hattab, G., Nazar Pastor, K.*, Award granted by the Tokyo Foundation.

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
Dr. Roland Wittler *	roland.wittler@uni-bielefeld.de
Prof. Dr. Bruno Miroux	bruno.miroux@ibpc.fr

* *external reviewers*