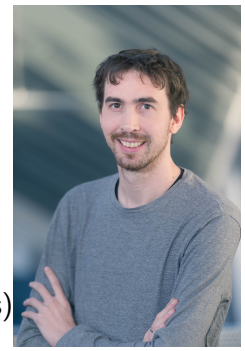
Steffen Frey

Date of Birth	22.11.1982
Position	Assistant Professor
Group	Scientific Visualization and Computer Graphics (SVCG)
Institution	University of Groningen (RUG)
Address	Nijenborgh 9 (Bernoulliborg), 9747 AG Groningen, Netherlands
E-Mail	s.d.frey@rug.nl
Homepage	https://freysn.github.io
	https://goo.gl/u5R6gT (Google Scholar | h-index 12, 471 citations)
ORCID	0000-0002-1872-6905



Academic Career

since 2020 **Assistant Professor**, *RUG*.

2014 – 2020 **Postdoctoral Researcher**, *University of Stuttgart, Visualization Research Center (VISUS)*.
Visionary Postdoc, SimTech Cluster of Excellence.

2008 – 2014 **Dr. rer. nat.**, *VISUS, date of defense: 07.11.2014*, Supervisor: Prof. Thomas Ertl , "Strategies for Efficient Parallel Visualization" *(summa cum laude)*.
Graduate School Simulation Technology, *SimTech Cluster of Excellence*.

2010 & 12 **Visiting Researcher**, *University of California, Davis, USA*, Prof. Kwan-Liu Ma, VIDI Labs.

2002 – 2008 **Dipl.-Inf.**, *University of Stuttgart*, Computer Science, thesis "GPU-based Cone Beam Reconstruction of Large CT Datasets" in collaboration with Daimler AG.

2005 – 2006 **Study Abroad**, *University of Kansas, Lawrence, USA*, with Science Scholarship.

Paper Awards

2020 **Best Paper**, *LDAV*, "Foveated Encoding for Large High-Resolution Displays" [6].

2019 **Winner**, *Scientific Visualization Contest 2019 (VIS 2019)*, "Visual Analysis of Structure Formation in Cosmic Evolution" [8].

Honorable Mention, *In Situ Infrastructures for Enabling Extreme-scale Analysis and Visualization (in conjunction with SC19)*, "The Impact of Work Distribution on In Situ Visualization: A Case Study" [15].

Best Paper, *EuroVis (Short Papers)*, "Voronoi-Based Foveated Volume Rendering" [13].

2018 **Best Paper**, *International Conference on Information Visualisation*, "Volume-Based Large Dynamic Graph Analytics" [17].

List of Publications (peer-reviewed, unless noted otherwise)

[1] **Frey, S.**, Scheller, S., Karadimitriou, N., Lee, D., Reina, G., Steeb, H., Ertl, T., "Visual Analysis of Two-Phase Flow Displacement Processes in Porous Media," *arXiv:2103.17197 [physics]*, no peer review, 2021. [Online]. Available: `http://arxiv.org/abs/2103.17197`.

[2] Gadirov, H., Tkachev, G., Ertl, T., **Frey, S.,** "Evaluation and Selection of Autoencoders for Expressive Dimensionality Reduction of Spatial Ensembles," in *ISVC '21: Proceedings of the 16th International Symposium on Advances in Visual Computing*, Berlin, Heidelberg: Springer-Verlag, (accepted for publication), 2021.

[3] Heinemann, M., **Frey, S.**, Tkachev, G., Straub, A., Sadlo, F., Ertl, T., "Visual analysis of droplet dynamics in large-scale multiphase spray simulations," en, *Journal of Visualization*, 2021.

[4] Tkachev, G., **Frey, S.**, Ertl, T., "S4: Self-supervised learning of spatiotemporal similarity," *IEEE Transactions on Visualization and Computer Graphics*, pp. 1–1, 2021, Conference Name: IEEE Transactions on Visualization and Computer Graphics.

[5] **Frey, S.**, "Temporally dense exploration of moving and deforming shapes," *Computer Graphics Forum*, vol. 40, no. 1, pp. 7–21, 2021.

[6] Frieß, F., Braun, M., Bruder, V., **Frey, S.**, Reina, G., Ertl, T., "Foveated encoding for large high-resolution displays," *IEEE Transactions on Visualization and Computer Graphics*, vol. 27, no. 2, pp. 1850–1859, Feb. 2021, Conference Name: IEEE Transactions on Visualization and Computer Graphics.

[7] Tkachev, G., **Frey, S.**, Ertl, T., "Local Prediction Models for Spatiotemporal Volume Visualization," *IEEE Transactions on Visualization and Computer Graphics*, vol. 27, no. 7, pp. 3091–3108, Jul. 2021.

[8] Schatz, K., Müller, C., Gralka, P., Heinemann, M., Straub, A., Schulz, C., Braun, M., Rau, T., Becher, M., **Frey, S.**, Reina, G., Sedlmair, M., Weiskopf, D., Ertl, T., Diehl, P., Marcello, D., Frank, J., Müller, T., "2019 IEEE scientific visualization contest winner: Visual analysis of structure formation in cosmic evolution," *IEEE Computer Graphics and Applications*, pp. 1–1, 2020, Conference Name: IEEE Computer Graphics and Applications.

[9] Schneider, M., Flemisch, B., **Frey, S.**, Hermann, S., Iglezakis, D., Ruf, M., Schembera, B., Seeland, A., Steeb, H., "Datenmanagement im SFB 1313," *Bausteine Forschungsdatenmanagement*, no. 1, pp. 28–38, Apr. 2020.

[10] Childs, H., Ahern, S. D., Ahrens, J., Bauer, A. C., Bennett, J., Bethel, E. W., Bremer, P.-T., Brugger, E., Cottam, J., Dorier, M., Dutta, S., Favre, J. M., Fogal, T., **Frey, S.**, Garth, C., Geveci, B., Godoy, W. F., Hansen, C. D., Harrison, C., Hentschel, B., Insley, J., Johnson, C. R., Klasky, S., Knoll, A., Kress, J., Larsen, M., Lofstead, J., Ma, K.-L., Malakar, P., Meredith, J., Moreland, K., Navrátil, P., O'Leary, P., Parashar, M., Pascucci, V., Patchett, J., Peterka, T., Petruzza, S., Podhorszki, N., Pugmire, D., Rasquin, M., Rizzi, S., Rogers, D. H., Sane, S., Sauer, F., Sisneros, R., Shen, H.-W., Usher, W., Vickery, R., Vishwanath, V., Wald, I., Wang, R., Weber, G. H., Whitlock, B., Wolf, M., Yu, H., Ziegeler, S. B., "A terminology for in situ visualization and analysis systems," *The International Journal of High Performance Computing Applications*, vol. 34, no. 6, pp. 676–691, Nov. 1, 2020, Publisher: SAGE Publications Ltd STM. [Online]. Available: `https://doi.org/10.1177/1094342020935991`.

[11] Bruder, V., Kurzhals, K., **Frey, S.**, Weiskopf, D., Ertl, T., "Space-time volume visualization of gaze and stimulus," *ACM Symposium on Eye Tracking Research & Applications (ETRA)*, 12:1–12:9, 2019.

[12] Bruder, V., Müller, C., **Frey, S.**, Ertl, T., "On evaluating runtime performance of interactive visualizations," *IEEE Transactions on Visualization and Computer Graphics*, pp. 1–1, 2019.

[13] Bruder, V., Schulz, C., Bauer, R., **Frey, S.**, Weiskopf, D., Ertl, T., "Voronoi-based foveated volume rendering," *EuroVis - Short Papers*, 2019.

[14] Fernandes, O., **Frey, S.**, Reina, G., Ertl, T., "Visual representation of region transitions in multi-dimensional parameter spaces," *Smart Tools and Applications in Graphics (STAG)*, 2019.

[15] Rau, T., Gralka, P., Fernandes, O., Reina, G., **Frey, S.**, Ertl, T., "The impact of work distribution on in situ visualization: A case study," *In Situ Infrastructures for Enabling Extreme-scale Analysis and Visualization (ISAV)*, 12:1–12:9, 2019.

[16] Tabiai, I., Tkachev, G., Diehl, P., **Frey, S.**, Ertl, T., Therriault, D., Lévesque, M., "Hybrid image processing approach for autonomous crack area detection and tracking using local digital image correlation results applied to single-fiber interfacial debonding," *Engineering in Fracture Mechanics*, vol. 216, p. 106 485, 2019.

[17] Bruder, V., Hlawatsch, M., **Frey, S.**, Burch, M., Weiskopf, D., Ertl, T., "Volume-Based Large Dynamic Graph Analytics," in *22nd International Conference on Information Visualisation*, 2018.

[18] **Frey, S.**, "Spatio-Temporal Contours from Deep Volume Raycasting," *Comput. Graph. Forum (EuroVis 2018)*, with talk, 2018.

[19] Frieß, F., Landwehr, M., Bruder, V., **Frey, S.**, Ertl, T., "Adaptive encoder settings for interactive remote visualisation on high-resolution displays," *Symposium on Large Data Analysis and Visualization (LDAV)*, 2018.

[20] Hui, Z., **Frey, S.**, Steeb, H., Uribe, D., Ertl, T., Wang, W., "Visualization of bubble formation in porous media," *IEEE Trans. Visual. Comput. Graphics (SciVis 2018)*, 2018.

[21] Bruder, V., **Frey, S.**, Ertl, T., "Prediction-based load balancing and resolution tuning for interactive volume raycasting," *Visual Informatics*, 2017.

[22] Bußler, M., Diehl, P., Pflüger, D., **Frey, S.**, Sadlo, F., Ertl, T., Schweitzer, M. A., "Visualization of fracture progression in peridynamics," *Computers and Graphics*, 2017.

[23] Diehl, P., Bußler, M., Pflüger, D., **Frey, S.**, Ertl, T., Sadlo, F., Schweitzer, M. A., "Extraction of fragments and waves after impact damage in particle-based simulations," in *Meshfree Methods for Partial Differential Equations VIII*, M. Griebel and M. A. Schweitzer, Eds. Cham: Springer International Publishing, 2017, pp. 17–34.

[24] Fernandes, O., **Frey, S.**, Ertl, T., "Transportation-based visualization of energy conversion," Springer, 2017.

[25] **Frey, S.**, Ertl, T., "Fast flow-based distance quantification and interpolation for high-resolution density distributions," in *EG 2017 - Short Papers*, with talk, 2017.

[26] Scharnowski, K., **Frey, S.**, Raffin, B., Ertl, T., "Spline-based decomposition of streamed particle trajectories for efficient transfer and analysis," in *EG 2017 - Short Papers*, 2017.

[27] Tkachev, G., **Frey, S.**, Müller, C., Bruder, V., Ertl, T., "Prediction of Distributed Volume Visualization Performance to Support Render Hardware Acquisition," in *Eurographics Symposium on Parallel Graphics and Visualization*, The Eurographics Association, 2017.

[28] **Frey, S.**, Ertl, T., "Progressive direct volume-to-volume transformation," *IEEE Trans. Visual. Comput. Graphics (SciVis 2016)*, vol. 23, no. 1, pp. 921–930, with talk, 2017.

[29] **Frey, S.**, "Sampling and estimation of pairwise similarity in spatio-temporal data based on neural networks," *Informatics*, vol. 4, no. 27, 2017.

[30] Bruder, V., **Frey, S.**, Ertl, T., "Real-time performance prediction and tuning for interactive volume raycasting," in *SIGGRAPH ASIA 2016 Symposium on Visualization*, ser. SA '16, Macau: ACM, 2016, 7:1–7:8.

[31] Fernandes, O., **Frey, S.**, Ertl, T., "Interpolation-based extraction of representative isosurfaces," in *Lecture Notes in Computer Science*, 2016.

[32] **Frey, S.**, Ertl, T., "Auto-tuning intermediate representations for in situ visualization," in *2016 New York Scientific Data Summit (NYSDS)*, with talk, abstract review only, 2016, pp. 1–10.

[33] **Frey, S.**, Ertl, T., "Flow-based temporal selection for interactive volume visualization," *Comput. Graph. Forum*, 2016.

[34] Schulz, C., Nocaj, A., El-Assady, M., **Frey, S.**, Hlawatsch, M., Hund, M., Karch, G., Netzel, R., Schätzle, C., Butt, M., Keim, D. A., Ertl, T., Brandes, U., Weiskopf, D., "Generative data models for validation and evaluation of visualization techniques," in *Proceedings of the Sixth Workshop on Beyond Time and Errors on Novel Evaluation Methods for Visualization*, ser. BELIV '16, Baltimore, MD, USA: ACM, 2016, pp. 112–124.

[35] Blom, D. S., Ertl, T., Fernandes, O., **Frey, S.**, Klimach, H., Krupp, V., Mehl, M., Roller, S., Sternel, D. C., Uekermann, B., Winter, T., Van Zuijlen, A. H., "Partitioned fluid-structure-acoustics interaction on distributed data," in *Software for Exascale Computing - SPPEXA 2013-2015*, Springer, Ed., vol. 113, Springer International Publishing, no peer review, 2016, Pages267–291.

[36] Fernandes, O., Blom, D. S., **Frey, S.**, Van Zuijlen, S. H., Bijl, H., Ertl, T., "On in-situ visualization for strongly coupled partitioned fluid-structure interaction," in *VI International Conference on Computational Methods for Coupled Problems in Science and Engineering*, 2015.

[37] **Frey, S.**, Sadlo, F., Ertl, T., "Balanced sampling and compression for remote visualization," in *ACM SIGGRAPH Asia 2015 Symposium on Visualization in High Performance Computing*, with talk, 2015.

[38] Panagiotidis, A., **Frey, S.**, Ertl, T., "Exploratory Performance Analysis and Tuning of Parallel Interactive Volume Visualization on Large Displays," in *EuroVis - Short Papers*, E. Bertini, J. Kennedy, and E. Puppo, Eds., The Eurographics Association, 2015.

[39] Fernandes, O., **Frey, S.**, Sadlo, F., Ertl, T., "Space-time volumetric depth images for in-situ visualization," in *IEEE Symposium on Large Data Analysis and Visualization*, 2014, pp. 59–65.

[40] **Frey, S.**, Sadlo, F., Ma, K., Ertl, T., "Interactive progressive visualization with space-time error control," *IEEE Trans. Visual. Comput. Graphics (SciVis 2014)*, vol. 20, no. 12, pp. 2397–2406, with talk, 2014.

[41] **Frey, S.**, Sadlo, F., Ertl, T., "Explorable volumetric depth images from raycasting," in *Conference on Graphics, Patterns and Images*, with talk, 2013, pp. 123–130.

[42] **Frey, S.**, Sadlo, F., Ertl, T., "Mesh Generation From Layered Depth Images Using Isosurface Raycasting," in *ISVC '13: Proceedings of the 9th International Symposium on Advances in Visual Computing*, Rethymnon, Crete, Greece: Springer-Verlag, with talk, 2013, pp. 373–383.

[43] **Frey, S.**, Reina, G., Ertl, T., "Simt microscheduling: Reducing thread stalling in divergent iterative algorithms," in *IEEE Euromicro International Conference on Parallel, Distributed and Network-based Processing*, with talk, 2012, pp. 399–406.

[44] **Frey, S.**, Sadlo, F., Ertl, T., "Visualization of temporal similarity in field data," *IEEE Trans. Visual. Comput. Graphics (SciVis 2012)*, vol. 18, no. 12, pp. 2023–2032, with talk, 2012.

[45] Ament, M., **Frey, S.**, Sadlo, F., Ertl, T., Weiskopf, D., "Gpu-based two-dimensional flow simulation steering using coherent structures," in *Proceedings of the Second International Conference on Parallel, Distributed, Grid and Cloud Computing for Engineering*, P. Iványi and B. H. V. Topping, Eds., paper 18, Stirlingshire, United Kingdom: Civil-Comp Press, 2011.

[46] **Frey, S.**, Ertl, T., "Load balancing utilizing data redundancy in distributed volume rendering," in *Eurographics Symposium on Parallel Graphics and Visualization*, with talk, 2011, pp. 51–60.

[47] **Frey, S.**, Schlömer, T., Grottel, S., Dachsbacher, C., Deussen, O., Ertl, T., "Loose capacity-constrained representatives for the qualitative visual analysis in molecular dynamics," in *IEEE Pacific Visualization Symposium*, with talk, 2011, pp. 51–58.

[48] Panagiotidis, A., Kauker, D., **Frey, S.**, Ertl, T., "DIANA: A Device Abstraction Framework for Parallel Computations," in *Proceedings of the Second International Conference on Parallel, Distributed, Grid and Cloud Computing for Engineering*, Stirlingshire, United Kingdom: Civil-Comp Press, 2011.

[49] **Frey, S.**, Ertl, T., "PaTraCo: A Framework Enabling the Transparent and Efficient Programming of Heterogeneous Compute Networks," in *EGPGV, Norrköping, Sweden*, Eurographics Association, with talk, 2010, pp. 131–140.

[50] Kauker, D., Sanftmann, H., **Frey, S.**, Ertl, T., "Memory Saving Fourier Transform on GPUs," in *International Conference on Computer and Information Technology*, IEEE, 2010, pp. 67–75.

[51] Üffinger, M., **Frey, S.**, Ertl, T., "Interactive high-quality visualization of higher-order finite elements," *Comput. Graphics Forum (Eurographics 2010)*, vol. 29, no. 2, pp. 337–346, 2010.

[52] Müller, C., **Frey, S.**, Strengert, M., Dachsbacher, C., Ertl, T., "A compute unified system architecture for graphics clusters incorporating data locality," *IEEE Trans. Visual. Comput. Graphics*, vol. 15, no. 4, pp. 605–617, 2009.

[53] **Frey, S.**, Ertl, T., "Accelerating Raycasting Utilizing Volume Segmentation of Industrial CT Data," in *EG UK Theory and Practice of Computer Graphics, Cardiff University, United Kingdom, 2009.*, W. Tang and J. P. Collomosse, Eds., Eurographics Association, with talk, 2009, pp. 33–40.

[54] **Frey, S.**, Müller, C., Strengert, M., Ertl, T., "Concurrent ct reconstruction and visual analysis using hybrid multi-resolution raycasting in a cluster environment," in *Proceedings of the 5th International Symposium on Advances in Visual Computing: Part I*, ser. ISVC '09, Las Vegas, Nevada: Springer-Verlag, with talk, 2009, pp. 357–366.

Acquisition of Research Funding (Stuttgart)

2019 **Machine Learning for Data-driven Visualization (ML4Vis)**, *Principal Investigator*, funded project within the SimTech Cluster of Excellence.
PhD student position

Quantifying Visual Computing Systems, *Principal Investigator*, project A02 in Transregional Collaborative Research Center 161 (Quantitative Methods for Visual Computing), 2nd funding period.
PhD student position

2018 **Visualization of Multi-field Processes in Porous Media**, *Principal Investigator*, project D01 in Collaborative Research Center 1313 (Interface-Driven Multi-Field Processes in Porous Media – Flow, Transport and Deformation).
PhD student position

- Co-Speaker of task force "Software and data"

Data-Integrated Simulation Science (EXC 2075), *Participating Researcher*, proposal for a DFG Cluster of Excellence, PN6: Machine Learning for Simulation.

2017 **Model-based Visual Analysis of Large Spatio-Temporal Data**, *Principal Investigator*, funded project within the SimTech Cluster of Excellence.
PhD student position

2015 **Quantifying Visual Computing Systems**, *Co-Author*, project A02 in Transregional Collaborative Research Center 161 (Quantitative Methods for Visual Computing).
PhD student position

2011 **MCSimVis: Many Core Simulation and Visualization**, *involvement in proposal*, BMBF Project, with industry partners INTES GmbH and science+computing AG.
PhD student position

Invited Presentations, Articles, and Posters

2021 **Pretty Porous Lecture Series (CRC 1313)**, *Visualization of Multifield Data — Layouts, Features, and Systems*, Talk.

2020 **KAUST Conference on Visualization**, *Workshop Invitation*, (postponed).

2018 **Dagstuhl Seminar (In Situ Visualization for Computational Science)**, *Reduced Representation Tradeoffs, Dynamic Prediction and Adjustment*, Talk.

2017 **NVIDIA GPU Technology Conference (GTC)**, *Fast Flow-based Distance Quantification and Interpolation for High-Resolution Density Distributions*, Talk.

2017 **ChinaVis (China-Germany Visualization Workshop)**, *High Performance Visualization of Volume and Time Series Data*, Talk.

2017 **EuroVis**, *Power Efficiency of Volume Raycasting on Mobile Devices*, Poster.

2017 **Eurographics**, *Flow-Based Temporal Selection for Interactive Volume Visualization*, Invited Talk of CGF paper.

2015 **ISC - Workshop on Software Frameworks for Scalable Scientific Simulations**, *Reduced Representations for In-Situ Visualization*, Talk.

2014 **GI BDVC**, *Quantifying Visual Computing Systems*, Talk.

2013 **ParCo**, *Interaction and HPC: Multi-Scale / Multi-Physics Applications*, Parallel Interactive Visualization: Strategies and Examples, Talk.

2012 **High Performance Visualization: Enabling Extreme-Scale Scientific Insight**, *GPU-Accelerated Visualization*, Book Chapter.

2009 **NVIDIA GPU Technology Conference (GTC)**, *Memory Saving Fourier Transform on GPUs*, Talk.

2009 **VIS**, *CUDA-Accelerated Continuous 2-D Scatterplots*, Poster.

Supervised PhD Students

since 2021 **Hamid Gadirov**, *(promotor J. Roerdink, Groningen)*, "Automatic Configuration of Scientific Visualization Systems using Optimization and Machine Learning ".

since 2018 **Moritz Heinemann**, *SFB TRR 75 (promotor T. Ertl, Stuttgart)*, "Interactive Visualization of Droplet Dynamics".

2018–2020 **Stefan Scheller**, *SFB 1313 (promotor T. Ertl, Stuttgart)*, "Visualization of Multi-field Processes in Porous Media".

since 2017 **Gleb Tkachev**, *SimTech Cluster of Excellence (promotor T. Ertl, Stuttgart)*, "Model-based Visual Analysis of Large Spatio-Temporal Data".

since 2016 **Valentin Bruder**, *SFB TRR 161(promotor T. Ertl, Stuttgart)*, "Quantifying Visual Computing Systems".

Supervised Bachelor and Master Theses

Groningen

2021 **Visualizing Iterative Refinement in Visualization**, *Ethan Waterink*, Research Internship MSc Computing Science, first supervisor.

A Virtual Ray Tracer, *C. Wezel, Verschoore de la Houssaije*, Bachelor Project, second supervisor.
(first supervisor: J. Kosinka)

Reducing Memory-Consumption and Cache-Misses in highly Fragmented Archetype-based Entity Component Systems, *H. Stegenga*, Master Project, second supervisor.
(first supervisor: A. Lazovik)

Stuttgart (together with T. Ertl)

2019 **Visual Analysis of Experimental Two-Phase Flow in Porous Media Ensemble Data**, *Cihan Erol*, Master.

2018 **Generating field data with GANs for evaluation of visualization performance**, *Elias Fauser*, Master.

Volume data interpolation using neural networks, *Hanna Bader*, Bachelor.

Foveated Volume Rendering, *Ruben Bauer*, Bachelor.

Machine Learning-based Analysis of Droplet Behavior in Multiphase Flow Simulations, *Moritz Heinemann*, Master.

2017/18 **Analysis of Spatiotemporal Ensemble Data using Machine Learning**, *Stefan Scheller*, Master.

Encoding Quality Prediction for Interactive Remote Visualization, *Mathias Landwehr*, Master.

2017 **Investigation of Volume Rendering Performance through Active Learning and Visual Analysis**, *Stephan Roth*, Master.

Investigation of State-of-the-Art Compression Algorithms for Densely Recorded Light Fields, *Clemens Sigel*, Bachelor.

2016/17 **Investigation and prediction of distributed volume rendering performance**, *Gleb Tkachev*, Master.

Progressive Sparse Coding for In Situ Volume Visualisation, *Gratian Berian*, Master.

2015/16 **Performance Quantification of Volume Visualization**, *Valentin Bruder*, Master.

Real-time Ray Tracing of Volumetric Data, *Marcus Richter*, Bachelor.

2014/15 **Dynamic Acceleration Structures for the Visualization of Time-Dependent Volume Data on the GPU**, *Hajun Jang*, Diplom.

2014 **Adaptive Frameless Raycasting for Interactive Volume Visualization**, *Constantin Weisser*, Bachelor.

2012/13 **Extraction of High Quality Isosurfaces from Large Volume Data**, *Thomas Mezger*, Diplom.

2010 **Distributed Raytracing on GPU Clusters**, *Jochen Puff*, Diplom.

2009/2010 **Algorithm Design and Algorithmic-Level Optimization of Video / Image Algorithm using an Abstract Common Interface for NVIDIA CUDA and Intel Larrabee Platforms**, *Daniel Kauker*, Diplom, in collaboration with Sony Deutschland.

Parallel Computation of Volumetric Illumination of Astrophysical Nebulae on GPU Clusters, *Manuel Moser*, Diplom.

Professional Service

Conference Organization

2022 **PacificVis 2022**, VisNotes Co-Chair.

LDAV 2022, Paper Chair.

2021 **PacificVis 2021**, Poster Co-Chair.

LDAV 2021, Poster Co-Chair.

since 2020 **EG Symposium on Parallel Graphics and Visualization (EGPGV)**, Steering Committee Member.

2020 **EG Symposium on Parallel Graphics and Visualization (EGPGV)**, Symposium Chair.

Symposium on Large Data Analysis and Visualization (LDAV), Poster Co-Chair.

2019 **EG Symposium on Parallel Graphics and Visualization (EGPGV)**, Program Co-Chair.

2018 **International Conference on Quantification in Visual Computing**, Poster Chair.

since 2016 **ISC Workshop on In Situ Visualization (WOIV)**, Organizer.

Program Committee

2022 **ICPR 2022**, Technical Committee – Track 1: Artificial Intelligence, Machine Learning for Pattern Analysis.

Visualization Meets AI (VisAI), workshop held in conjunction with PacificVis.

2021 **VIS**, *Short Papers Track*.

International Symposium on Visual Computing (ISVC).

In Situ Infrastructures for Enabling Extreme-scale Analysis and Visualization (ISAV).

Symposium on Large Data Analysis and Visualization (LDAV).

Conference on Graphics, Patterns, and Images (SIBGRAPI).

International Symposium on Vision, Modeling, and Visualization (VMV).

International Symposium on Visual Information Communication and Interaction (VINCI).

2020 **EuroVis**, *Short Papers Track*.

VIS, *SciVIS track*.

International Conference on Pattern Recognition (ICPR), *Track 1: Artificial Intelligence, Machine Learning for Pattern Analysis*.

Visualization Meets AI (VisAI), workshop held in conjunction with PacificVis.

Workshop on Big Data Visual Exploration and Analytics (BigVis 2020).

Euromicro Conference on Software Engineering and Advanced Applications (SEAAA), *Special Track on AI-Enabled Software Development and Operations*.

International Conference on Advanced Communications and Computation (INFOCOMP).

International Symposium on Visual Computing (ISVC).

International Symposium on Visual Information Communication and Interaction (VINCI).

In Situ Infrastructures for Enabling Extreme-scale Analysis and Visualization (ISAV).

Symposium on Large Data Analysis and Visualization (LDAV).

Conference on Graphics, Patterns, and Images (SIBGRAPI).

International Symposium on Vision, Modeling, and Visualization (VMV).

2019 **International Symposium on Visual Information Communication and Interaction (VINCI)**.

Conference on Graphics, Patterns, and Images (SIBGRAPI).

VIS, *SciVIS track*.

Euromicro Conference on Software Engineering and Advanced Applications (SEAAA), *Special Track on Software and Big Data Analytics*.

International Symposium on Vision, Modeling, and Visualization (VMV).

In Situ Infrastructures for Enabling Extreme-scale Analysis and Visualization (ISAV).

EuroVis, *Short Papers Track*.

International Symposium on Visual Computing (ISVC).

Symposium on Large Data Analysis and Visualization (LDAV).

International Conference on Advanced Communications and Computation (INFOCOMP).

2018 **VIS**, *SciVIS track*.

Euromicro Conference on Software Engineering and Advanced Applications (SEAAA), *Special Track on Software and Big Data Analytics*.

International Symposium on Vision, Modeling, and Visualization (VMV).

In Situ Infrastructures for Enabling Extreme-scale Analysis and Visualization (ISAV).

EuroVis, *Short Papers Track*.

International Symposium on Visual Computing (ISVC).

Symposium on Large Data Analysis and Visualization (LDAV).

Supercomputing (SC), *Data Analytics, Visualization & Storage track*.

Supercomputing Asia.

International Supercomputing Conference (ISC).

International Conference on Advanced Communications and Computation (INFOCOMP).

2017 **EuroVis**, *Short Papers Track*.

International Symposium on Visual Computing (ISVC).

Symposium on Large Data Analysis and Visualization (LDAV).

International Supercomputing Conference (ISC).

SIGGRAPH ASIA Symposium on Visualization.

2016 **International Symposium on Visual Computing (ISVC)**.

Symposium on Large Data Analysis and Visualization (LDAV).

SIGGRAPH ASIA Symposium on Visualization.

Professional Societies and Committees

2022 **Co-examiner on the PhD committee of V. Bruder in Stuttgart (main supervisor: T. Ertl)**.

2021 **Co-examiner on the PhD committee of V. Bruder in Stuttgart (main supervisor: T. Ertl)**.

Co-examiner on the PhD committee of G. Hettinga in Groningen (main supervisor: J. Kosinka).

since 2020 **"Fachgruppe Visualisierung" of the German Informatics Society**.

Programme Committee Computing Science at RUG.

2017 **Appointment Committee for SimTech Professorship in Machine Learning at the University of Stuttgart**.