Curriculum Vitae

1) Personal Details

Prof. Dr. Nils Thuerey

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2) Employment

since Oct. 2017	Associate-Professor at Technische Universität München
Oct. 2013 - Sept. 2017	Assistant-Professor at Technische Universität München
Apr. 2010 - Jun. 2013	Research and development lead at ScanlineVFX; Los Angeles, Munich & Vancouver. (Supervisor: S. Trojansky)
Oct. 2006 - Feb. 2010	Post-doctoral researcher at the Computer Graphics Laboratory of ETH Zurich, Switzerland. (Supervisor: Prof. M. Gross)
Dec. 2003 - Mar. 2007	Ph.D. in computer science (with honors), University of Erlangen-Nuremberg, Germany. (Supervisor: Prof. U. Ruede)
Jul. 2003 - Nov. 2003	Visiting researcher at Lawrence-Livermore National Laboratory, USA. Topic: optimizing compilers. (Supervisor: D. Quinlan)
Oct. 1998 - Jun. 2003	M.Sc. (Diplom) in computer science, University of Erlangen-Nuremberg, Germany.

3) Publications

References

[1] Steffen Wiewel, Moritz Becher, and Nils Thuerey. Latent-space Physics: Towards Learning the Temporal Evolution of Fluid Flow. *Comp. Grap. Forum*, 38(2):12, 2019.

[2] Byungsoo Kim, Vinicius C Azevedo, Nils Thuerey, Theodore Kim, Markus Gross, and Barbara Solenthaler. Deep Fluids: A Generative Network for Parameterized Fluid Simulations. *Comp. Grap. Forum*, 38(2):12, 2019.

[3] Kiwon Um, Xiangyu Hu, and Nils Thuerey. Splash Modeling with Neural Networks. *Computer Graphics Forum*, 37(8), 2018.

[4] Marie-Lena Eckert, Wolfgang Heidrich, and Nils Thuerey. Coupled Fluid Density and Motion from Single Views. *Computer Graphics Forum*, 37(8), 2018.

[5] Takahiro Sato, Chris Wojtan, Nils Thuerey, Takeo Igarashi, and Ryoichi Ando. Extended Narrow Band FLIP for Liquid Simulations. *Computer Graphics Forum*, 2018.

[6] Ibayashi Hikaru, Chris Wojtan, Nils Thuerey, Takeo Igarashi, and Ryoichi Ando. Simulating Liquids on Dynamically Warping Grids. *IEEE Transactions on Visualization and Computer Graphics*, 2018.

[7] Y. Xie, E. Franz, R. Chu, N. Thuerey. tempoGAN: A Temporally Coherent, Volumetric GAN for Super-resolution Fluid Flow. *ACM Transactions on Graphics 37(4) (SIGGRAPH)*, 2018.

[8] Nils Thuerey. Interpolations of Smoke and Liquid Simulations. *ACM Transactions on Graphics (TOG)*, 36(1):3, 2017.

[9] R. Chu, N. Thuerey. Data-Driven Synthesis of Smoke Flows with CNN-based Feature Descriptors. *ACM Transactions on Graphics 36(4) (SIGGRAPH)*, 2017.

[10] K. Um, X. Yu, N. Thuerey. Perceptual Evaluation of Liquid Simulation Methods. *ACM Transactions on Graphics 36(4) (SIGGRAPH)*, 2017.

[11] D. Koschier, N. Thuerey, J. Bender. Robust eXtended Finite Elements for Complex Cutting of Deformables. *ACM Transactions on Graphics 36(4) (SIGGRAPH)*, 2017.

[12] S. Eberhardt, S. Weissmann, U. Pinkall, N. Thuerey. Hierarchical Vorticity Skeletons. *Proc. Symposium on Computer Animation (SCA)*, 2017.

[13] T. Inglis, M.-L. Eckert, J. Gregson, N. Thuerey. Primal-Dual Optimization for Fluids. *Computer Graphics Forum*, Wiley, 2017.

[14] A. Monszpart, N. Thuerey, N. Mitra. SMASH: Data-driven Reconstruction of Physically Valid Collisions. *ACM Transactions on Graphics (SIGGRAPH Asia), 35(5)*, 2016.

[15] J.-A. Canbal, D. Miraut, T. Kim, J. Portilla, N. Thuerey, M. Otaduy. Dispersive Water Waves. *ACM Transactions on Graphics (SIGGRAPH Asia), 35(5)*, 2016.

[16] F. Ferstl, R. Ando, C. Wojtan, R. Westermann, N. Thuerey. Narrow Band FLIP for Liquid Simulations. *Computer Graphics Forum (Eurographics)*, 2016.

[17] B. Jones, N. Thuerey, T. Shinar, and A. Bargteil. Example-based Plastic Deformation of Rigid Bodies. *ACM Transactions on Graphics (SIGGRAPH), 35(4)* , 2016.

[18] R. Ando, N. Thuerey, and C. Wojtan. A Dimension-reduced Pressure Solver for Liquid Simulations. *Computer Graphics Forum (Eurographics)*, 2015.

[19] O. Mercier, C. Beauchemin, N. Thuerey, T. Kim, D. Nowrouzezahrai. Surface Turbulence for Particle-Based Liquid Simulations. *ACM Transactions on Graphics (SIGGRAPH Asia), 34(6)*, 2015.

[20] R. Ando, N. Thuerey, and C. Wojtan. A Stream Function Solver for Liquid Simulations. *ACM Transactions on Graphics (SIGGRAPH), 34(2)*, 2015.

[21] J. Gregson, I. Ihrke, N. Thuerey, and W. Heidrich. From Capture to Simulation: Connecting Forward and Inverse Problems in Fluids. *ACM Transactions on Graphics (SIGGRAPH), 33(4)*, 2014.

[22] K. Raveendran, N. Thuerey, C. Wojtan, and G. Turk. Blending Liquids. *ACM Transactions on Graphics (SIGGRAPH), 33(4)*, 2014.

[23] R. Ando, N. Thuerey, and C. Wojtan. Highly Adaptive Liquid Simulations on Tetrahedral Meshes. *ACM Transactions on Graphics (SIGGRAPH)*, 32 (4):10, 2013.

[24] T. Kim, J. Tessendorf, and N. Thuerey. Closest-Point Turbulence for Liquid Surfaces. *ACM Transactions on Graphics*, 32 (2):10, 2013.

[25] T. Pfaff, N. Thuerey, and M. Gross. Lagrangian Vortex Sheets for Animating Fluids. *ACM Transactions on Graphics (SIGGRAPH)*, 31 (4):8, 2012.

[26] R. Ando, N. Thuerey, and R. Tsuruno. Preserving Fluid Sheets with Adaptively Sampled Anisotropic Particles. *IEEE Transactions on Visualization and Computer Graphics*, 18 (8):1202–1214, 2011.

[27] N. Thuerey, C. Wojtan, M. Gross, and G. Turk. A Multiscale Approach to Mesh-based Surface Tension Flows. *ACM Transactions on Graphics (SIGGRAPH)*, 29 (4):10, 2010.

[28] C. Wojtan, N. Thuerey, M. Gross, and G. Turk. Physics-Inspired Topology Changes for Thin Fluid Features. *ACM Transactions on Graphics (SIGGRAPH)*, 29 (4):8, 2010.

[29] T. Pfaff, N. Thuerey, J. Cohen, S. Tariq, and M. Gross. Scalable Fluid Simulation using Anisotropic Turbulence Particles. *ACM Transactions on Graphics (SIGGRAPH Asia)*, 29 (5):8, 2010.

[30] T. Pfaff, N. Thuerey, A. Selle, and M. Gross. Synthetic Turbulence using Artificial Boundary Layers. *ACM Transactions on Graphics (SIGGRAPH Asia)*, 28 (5):10, 2009.

[31] C. Wojtan, N. Thuerey, M. Gross, and G. Turk. Deforming Meshes that Split and Merge. *ACM Transactions on Graphics (SIGGRAPH)*, 28 (3):9, 2009.

[32] N. Thuerey, R. Keiser, U. Ruede, and M. Pauly. Detail-Preserving Fluid Control. *Graphical Models*, 71,6:221–228, 2009.

[33] K. Iglberger, N. Thuerey, and U. Ruede. Simulation of moving particles in 3D with the Lattice Boltzmann method. *Computers and Mathematics with Applications, Mesoscopic Methods in Engineering and Science*, 55 (7):1461–1468, 2008.

[34] N. Thuerey and U. Ruede. Stable free surface flows with the lattice Boltzmann method on adaptively coarsened grids. *Computing and Visualization in Science*, 12 (5), 2009.

[35] R. Angst, N. Thuerey, M. Botsch, and M. Gross. Robust and Efficient Wave Simulations on Deforming Meshes. *Computer Graphics Forum*, 27 (7):1895–1900, 2008.

[36] T. Kim, N. Thuerey, D. James, and M. Gross. Wavelet Turbulence for Fluid Simulation. *ACM Transactions on Graphics (SIGGRAPH)*, 27 (3):6, 2008.

[37] N. Thuerey, T. Pohl, U. Ruede, M. Oechsner, and C. Koerner. Optimization and Stabilization of LBM Free Surface Flow Simulations using Adaptive Parameterization. *Computers and Fluids*, 35 [8-9]:934–939, 2006.

[38] C. Binder, C. Feichtinger, H.-J. Schmid, N. Thuerey, W. Peukert, and U. Ruede. Simulation of the Hydrodynamic Drag of Aggregated Particles. *Journal of Colloid and Interface Science*, 301:155–167, 2006.

[39] C. Koerner, M. Thies, T. Hofmann, N. Thuerey, and U. Ruede. Lattice Boltzmann Model for Free Surface Flow for Modeling Foaming. *Journal of Statistical Physics*, 121 [1-2]:179–196, 2005.

Books / Chapters of Books

[40] M. Gross, R. Sumner, and N. Thuerey. The Design and Development of Computer Games. *The Design of Material, Organism, and Minds (Editors: S. Lang, M. Hampe)*, ISBN 978-3-549-68995-9:14, 2011.

[41] N. Thuerey. Physically based Animation of Free Surface Flows with the Lattice Boltzmann Method. *PhD thesis*, ISBN 978-3-89963-519-5, 2007.

[42] C. Koerner, T. Pohl, U. Ruede, N. Thuerey, and T. Zeiser. Parallel Lattice Boltzmann Methods for CFD Applications. *Numerical Solution of Partial Differential Equations on Parallel Computers*, ISBN 3-540-29076-1:439–465, 2006.

Additional Publications

[40] Lukas Prantl, Boris Bonev, and Nils Thuerey. Generating Liquid Simulations with Deformation-Aware Neural Networks. *Proc. ICLR*, page 20, 2019.

[41] Sebastian Eberhardt, Steffen Weissmann, Ulrich Pinkall, and Nils Thuerey. Hierarchical vorticity skeletons. In *Proceedings of the ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, page 6. ACM, 2017.

[42] K. Raveendran, N. Thuerey, C. Wojtan, and G. Turk. Controlling Fluids using Meshes. *SCA '12: Proceedings of the 2012 ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, pages 1–8, 2012.

[43] T. Oskam, Robert Sumner, N. Thuerey, and Markus Gross. Visibility transition planning for dynamic camera control. In *Motion in Games, Lecture Notes in Computer Science*, volume 6459, pages 325–335, 2010.

[44] T. Oskam, R. W. Sumner, N. Thuerey, and M. Gross. Visibility Transition Planning for Real-Time Camera Control. *SCA '09: Proceedings of the 2009 ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, pages 55–65, 2009.

[45] R. Sumner, N. Thuerey, and M. Gross. The ETH Game Programming Laboratory: A Capstone for Computer Science and Visual Computing. *Game Development in Computer Science Education*, 2008.

[46] N. Thuerey, T. Pohl, and U. Ruede. Hybrid Parallelization Techniques for Lattice Boltzmann Free Surface Flows. *Proceedings of Parallel CFD 2007*, pages 1–8, 2007.

[47] N. Thuerey, M. Mueller-Fischer, S. Schirm, and M. Gross. Real-time Breaking Waves for Shallow Water Simulations. *Proceedings of the Pacific Conference on Computer Graphics and Applications 2007*, pages 39–46, 2007.

[48] N. Thuerey, F. Sadlo, S. Schirm, M. Mueller-Fischer, and M. Gross. Real-time simulations of bubbles and foam within a shallow water framework. *SCA '07: Proceedings of the 2007 ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, pages 191–198, 2007.

[49] N. Thuerey, R. Keiser, U. Ruede, and M. Pauly. Detail-Preserving Fluid Control. *SCA '06: Proceedings of the 2006 ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, pages 7–12, 2006.

[50] N. Thuerey, U. Ruede, and M. Stamminger. Animation of Open water Phenomena with coupled Shallow Water and Free Surface Simulation. *SCA '06: Proceedings of the 2006 ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, pages 157–166, 2006.

[51] N. Thuerey, K. Iglberger, and U. Ruede. Free Surface Flows with Moving and Deforming Objects for LBM. *Proceedings of Vision, Modeling and Visualization 2006*, pages 193–200, 2006.

[52] Y. Zheng, H. Koestler, N. Thuerey, and U. Ruede. Enhanced Motion Blur Calculation with Optical Flow. *Proceedings of Vision, Modeling and Visualization 2006*, pages 253–260, 2006.

[53] N. Thuerey. Fluid Simulation with Blender. *Dr. Dobbs Journal*, 2006.

[54] K. Iglberger, N. Thuerey, U. Rüde, H.J. Schmid, and W. Peukert. Simulation of moving Nano-Particles with the Lattice Boltzmann method in 3D. In *18th Symposium ASIM 2005 Proceedings*, volume 15, pages 39–44. ASIM, SCS Publishing House, Sep 2005.

[55] C. Feichtinger, N. Thuerey, U. Rüde, C. Binder, H.J. Schmid, and W. Peukert. Drag Force Simulations of Particle Agglomerates with the Lattice Boltzmann Method. In *18th Symposium ASIM 2005 Proceedings*, volume 15, pages 45–50. ASIM, SCS Publishing House, Sep 2005.

[56] N. Thuerey and U. Ruede. Free Surface Lattice-Boltzmann fluid simulations with and without level sets. *Proc. of Vision, Modelling, and Visualization VMV*, pages 199–207, 2004.

[57] T. Pohl, Frank Deserno, N. Thuerey, U. Ruede, P. Lammers, G. Wellein, and T. Zeiser. Performance Evaluation of Parallel Large-Scale Lattice Boltzmann Applications on Three Supercomputing Architectures. *SC '04: Proceedings of the 2004 ACM/IEEE conference on Supercomputing*, page 21, 2004.

[58] N. Thuerey. A Lattice Boltzmann method for single-phase free surface flows in 3D. Masters thesis, Dept. of Computer Science 10 System-Simulation, University of Erlangen-Nuremberg, 2003.

[59] M. Kowarschik, U. Ruede, N. Thuerey, and C. Weiss. Performance Optimization of 3D Multigrid on Hierarchical Memory Architectures. *Proceedings of PARA'02*, pages 307–318, 2002.

[60] N. Thuerey. Cache Optimizations for Multigrid in 3D. Study Thesis, Institute for System Simulation, University of Erlangen-Nuremberg, Jun 2002.

4) Funding and Achievements

Acquired Funds

[1] Intel Network on Intelligent Systems Grant, *Physics-Based Deep Learning Methods*.
Duration: Jan. 2019, ongoing.

[2] ERC Proof of Concept Grant, *dataFlow: A Data-driven Fluid Flow Solving Platform*.
Duration: June 2019 to Dec 2020.

[3] Intel Research Gift Grant, *Physics-Based Deep Learning Methods*.
Duration: Apr. 2018 to Dec. 2018.

[4] DFG Grant, *Eulerian Methods for the Physically-based Animation of Deformable Objects*.
Co-applicants: Prof. J. Bender (TU Darmstadt).
Duration: Mar. 2017 to Feb. 2019.

[5] Samsung GRO Project, *Complex Flow Effects for Mobile Devices, Extension*.
Duration: Feb. 2016 to Jan. 2017.

[6] ERC Starting Grant, *realFlow: Virtualization of Real Flows for Animation and Simulation*.
Duration: May 2015 to Apr 2020.

[7] Samsung Global-Research Outreach Project, *Complex Flow Effects for Mobile Devices*.
Duration: Jan. 2015 to Dez. 2015.

[8] BaCaTec Proposal, *High-level Optimization of Numerical Fluid Simulations*.
Duration: Jan. 2014 to Dec. 2015.

[9] Research internship at ScanlineVFX, *Mesh-based fluid control*.
Duration: May 2011 to July 2011.

[10] ETH research grant, *Data driven fluids*. Co-applicants: Prof. M. Gross (ETH Zurich).
Duration: Jan. 2007 to Dec. 2010.

[11] ETH Industry collaboration grant, *Real-time fluid simulation for computer games*.
Co-applicants: AGEIA, Prof. M. Gross (ETH Zurich).
Duration: Oct. 2006 to Oct. 2007.

Awards

- SCA Best Paper Award for *Coupled Motion and Density for Fluids*, 2018-07-11.
- Eurographics Best Paper Award for *A Dimension-reduced Pressure Solver for Liquid Simulations*, 2015-05-04.
- Technical Achievement Award from the Academy of Motion Picture Arts and Sciences ("Tech-Oscar") for the *Wavelet Turbulence* algorithm, 2013-02-13
- *Staedtler Graduation Award* for Phd-thesis (highest remunerated award of FAU), 2008-08-10

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5) Teaching

Teaching Activities

Courses

- *Grundlagen: Algorithmen und Datenstrukturen (IN0007)*, SS 2019
  Mandatory bachelor-level CS course. 3h lectures, 2h exercises per week.

- *Advanced Deep Learning for Physics*, SS 2017 + SS 18
  Master-level course. 3h lectures, 2h exercises per week.
- *Computer Games Laboratory (IN7106-15)*, WS 2015/16 + SS 16 + WS 16/17 + SS 17 + SS 18
  Master-level practical course.
- *Simulation for Visual Effects*, SS 2015 + SS 16
  Master-level course. 4h lectures, 1h exercises per week.
- *Game-Physics*, WS 2013/14 + WS 14/15 + WS 15/16 + WS 16/17 + WS 17/18 + WS 18/19
  Mandatory bachelor-level CS-Games Eng. course. 3h lectures, 2h exercises per week.

Seminars

- *Deep Learning in Computer Graphics / Physics*, WS 2018/19, SS 2019.
- *Machine Learning in Computer Graphics*, WS 2016/17 + SS 17 + WS 17/18 + SS 18.
- *Physically-based Rendering: from Theory to Implementation*, WS 2014/15.
- *Recent Highlights in Graphics, Special Effects and Visualization*, SS 2014 + SS 15 + SS 16 .

Tutorials

- *Deep Learning for Computer Graphics*, Course at SIGGRAPH Asia conference.
  Co-lecturers: N. Mitra, P. Guerrero, 2018.
- *Turbulent Fluids*, Course at SIGGRAPH 2013 and Eurographics 2014 conferences, Organizer.
  Co-lecturers: T. Kim, T. Pfaff, 2013/14.
- *Real-time Physics*, Course at SIGGRAPH conference, Co-lecturers: M. Mueller, J. Stam, D. James, 2008.
- *LBM Fluid Simulations*, tutorial at IEEE VIS conference, Co-lecturers: Y. Zhao, A. Kaufmann, 2008.

Teaching Activities, Prior to TUM

- *Fluid simulation training*, lecture series for artists at ScanlineVFX, 2012.
- *Physically-based animation*, master-level course at ETH Zurich, 2010.
- *Physically-based animation*, master-level course at ETH Zurich; Co-lecturer: M. Gross, 2009.
- *Advanced topics in computer graphics*, seminar at ETH Zurich, 2008 + 2009.
- *Game programming laboratory*, master-level practical course at ETH Zurich, Co-lecturers: M. Gross, R. Sumner, 2007 + 2008 + 2009.
- *Numerical simulation of fluids, exercise supervision*, 2004 + 2005 + 2006.

Supervision

Ph.D. and Post-doctoral

[1] *M.Sc. Philipp Holl*, Ph.D. student, since 2018-07-01.

[2] *M.Sc. Lukas Prantl*, Ph.D. student, since 2018-06-04.

[3] *M.Sc. Steffen Wiewel*, Ph.D. student, since 2018-04-15.

[4] *Dr. Kiwon Um*, Post-doctoral researcher since 2015-07-01, co-funded by TUFF fellowship.

[5] *M.Sc. Marie-Lena Eckert*, Ph.D. student since 2015-02-01.

[6] *M.Sc. Mengyu (Rachel) Chu*, Ph.D. student since 2014-05-07.

[7] *Dr. Sebastian Eberhardt*, Post-doctoral researcher, 2015-02-01 – 2017-01-31.

[8] *Dr. Tiffany Inglis*, Post-doctoral researcher 2014-05-05 – 2016-01-31,
co-funded by NSERC Postdoctoral Fellowship (Canada).

Co-supervised Ph.D.s

[1] *Dan Koschier*, RWTH Aachen, completed 2018.

[2] *Ben Jones*, University of Utah, completed 2015.

[3] *Karthik Raveendran*, Georgia-Tech, completed 2014.

[4] *Ryoichi Ando*, Kyushu University, completed 2014.

[5] *Tobias Pfaff*, ETH Zurich, completed 2013.

[6] *Chris Wojtan*, Georgia-Tech, completed 2012.

Master/Bachelor Theses:

- **2018**, TUM: 4 Master Theses, 3 Bachelor Theses, 3 Guided Research Projects
- **2017**, TUM: 4 Master Theses, 2 Bachelor Theses
- **2016**, TUM: 4 Master Theses, 5 Bachelor Theses, 3 Guided Research Projects
- **2015**, TUM: 2 Master Theses, 8 Bachelor Theses
- **2014**, TUM: 3 Master Theses, 3 Bachelor Theses
- **2007-2009**, ETH Zurich: 3 Master Theses, 3 Bachelor Theses
- **2004-2006**, University of Erlangen-Nuremberg: 2 Master Theses, 3 Bachelor Theses

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6) Academic Engagement

Committees and Memberships:

- since 2019: *Director of Intel Network on Intelligent Systems Lab*
- since 2018: Vice Head of the *Symposium for Computer Animation* Steering Committee
- since 2018: Editor of *Computer Graphics Forum* Journal
- since 2013: Member of the *Structural Planning Commission of the Informatics Department*
- since 2015: *Guest-professor Selection Committee* (TUM August-Wilhelm Scheer Program)

Professional Activities:

- Papers Chair:
  - Symposium on Computer Animation 2018
- Program Committee Member:
  - Eurographics 2018
  - SIGGRAPH Asia 2017
  - Symposium on Computer Animation 2017
  - Graphics Interface 2017
  - Pacific Graphics 2017
  - SIGGRAPH Asia 2016
  - Eurographics 2016
  - Pacific Graphics 2016
  - Symposium on Computer Animation 2016
  - Pacific Graphics 2015
  - Symposium on Computer Animation 2015
  - Computer Graphics International 2015
  - Eurographics 2015
  - Pacific Graphics 2014
  - Symposium on Computer Animation 2014
  - Computer Graphics International 2014
  - Symposium on Computer Animation 2013
  - Pacific Graphics 2013
  - SIGGRAPH 2012
  - SIGGRAPH 2011
  - Eurographics 2009
  - Symposium on Computer Animation 2008
  - Symposium on Computer Animation 2007
- Reviewing Activities:
  - ERC Starting / Consolidator Grants
  - ACM Transactions on Graphics
  - IEEE Transactions on Visualization and Computer Graphics
  - Computer Graphics Forum
  - Computers and Graphics

  - Communications in Computational Physics
  - Computer Graphics and Applications
  - MDPI Computation
  - The Visual Computer
  - Computer Animation and Virtual Worlds
  - SIAM Journal of Scientific Computing
- Organization of TUM/IST research retreat 2015 – 2018.
- Local organizing committee of *SPHERIC* conference, 2016.
- Organizer of TUM Ferienakdemie (summer school) course "Accelerating Physics Simulations with Deep Learning", 2017 and 2018.

Patents:

- *Method and apparatus for modeling smoke turbulence based on patches*, US patent 15/191,743. R. Chu, N. Thuerey, N. Kang, H. E. Lee, D. H. Sagong.
- *Real-time breaking waves for shallow water simulations*, US patent 8204725 , 2012. N. Thuerey, M. Mueller-Fischer, S. Schirm, M. Gross
- *Two-way rigid body coupling in shallow water simulations*, US patent 8041550 , 2011. N. Thuerey, M. Mueller-Fischer, S. Schirm, M. Gross
- *Visibility transition planning for dynamic camera control*, US patent application 12/843827, 2010. R. Sumner, M. Gross, N. Thuerey, T. Oskam

Public Relations (Selection):

- Organization of the I15 TUM open-house booth, 2018-10-13.
- TUM IAS General Assembly, invited talk *Can computers learn physics by example?*, 2018-06-06.
- TV Science-show "Galileo", Pro 7 *Deutsche ohne die es Hollywood nicht gäbe*, 2018-03-02.
- TEDx talk: *Deep Learning beyond Cats and Dogs*, 2017-10-02.
- Organization of the I15 TUM open-house booth, 2016-10-22.
- Sueddeutsche: *Von Avatar bis Sherlock Holmes*, 2016-02-05.
- BR TV Interview: *Explosionsgefahr*, 2015-12-15.
- Radio Eins interview: *Die perfekte Explosion*, 2015-11-07.
- Spiegel: *Dampf, Rauch - und Rums!*, 2015-10-31.
- Technologist Spotlight: *Master of Illusion*, 2015-05-18.
- TUM press release: *In pursuit of the perfectly animated cloud of smoke*, 2015-03-12.
- Organization of the TUM open-house booth for the *Computer Graphics and Visualization* and *Games-Engineering* groups, 2014-10-11.
- TUM Schülertag: talk *"Special Effects with Computer Animation"* , 2014-02-06.

Invited Talks:

- 2018-04-11: *Deep Learning for Fluid Simulations*, Invited talk at Einstein Workshop, Berlin, Germany
- 2017-05-18: *Fluid Simulations with Neural Networks*, Invited talk at Graphics Interface conference, Edmonton, Canada

- 2015-11-19: *Virtual and Real Flows: Challenges for Digital Special Effects*, Keynote talk at Supercomputing Conference, Texas, USA
- 2013-07-25: *"Turbulent Flow Simulations for Special Effects"*, Plenary talk at XSEDE Conference, San Diego, USA
- 2010-12-05: *"Virtual Smoke and Water"*, Invited talk at Zurich Minds Conference, Zurich, Switzerland

Selected Talks and Lectures:

- 2018-11-29: Beijing Film Academy, Beijing, China
- 2018-10-19: Google Deepmind, UK
- 2018-10-18: University College London, UK
- 2018-08-10: Intel, Santa Clara, USA
- 2018-04-10: TU Berlin, Germany
- 2018-05-03: Columbia University, NY, USA
- 2017-08-08: Pixar Animation Studios, USA
- 2017-08-07: Google Mountainview, USA
- 2016-07-19: Pixar Animation Studios, USA
- 2016-07-18: Industrial Light and Magic, USA
- 2016-07-08: Imagine INRIA Grenoble, France
- 2015-05-31: Institut d'Optique INRIA Bordeaux, France
- 2015-05-13: TUM Institute for Advanced Studies, Germany
- 2014-12-03: Information day for ERC Grants, Muenchen, Germany
- 2014-02-13: Talk at Samsung SRUK, London, UK
- 2013-09-27: UC Berkeley, Berkeley, USA
- 2013-09-20: Dreamworks, Los Angeles, USA
- 2013-08-27: University of Southern California, Los Angeles, USA
- 2013-06-07: University of British Columbia, Canada
- 2012-04-20: University College London, London, UK
- 2011-11-24: ETH Zurich, Zurich, Switzerland
- 2011-07-18: IST Austria, Vienna, Austria
- 2010-08-25: Caltech, Pasadena, USA
- 2010-01-21: Fit for IT, Schaffhausen, Switzerland
- 2009-08-11: Rhythm and Hues Studios, Los Angeles, USA
- 2009-04-01/08: Microsoft Tech-Days, Geneva & Bern, Switzerland
- 2005-10-27: Applied Geometry Group, ETH Zurich, Switzerland
- 2004-06-01: CAB, University of Braunschweig, Germany

Committees and Activities (at TUM):

- Ph.D. Committee (Promotionsvorsitz) *N. Rieke*, 2018-11-19.

- Ph.D. Committee (Promotionsvorsitz) *P. Christ*, 2017-11-06.
- Ph.D. Committee (Promotionsvorsitz) *O. Zettinig*, 2017-08-08.
- Ph.D. Committee (Promotionsvorsitz) *O. Meister*, 2016-12-02.
- Ph.D. Committee (Promotionsvorsitz) *V. Del Razo Sarmina*, 2016-10-04.
- Ph.D. Committee (at IST Austria) *M. Bojsen-Hansen*, 2016-07-15.
- Invited video reel shown at *ISC High-Performance Computing Conference*, Frankfurt, 2016-06-20.
- Ph.D. Committee (Promotionsvorsitz) *S. Carstens*, 2016-03-11.
- Further Education: Participation in TUM ProLehre Teaching Module T2, 2016-02-29.
- Evaluation of R. Moessbauer professorship application of *Matthias Niessner*.
- Ph.D. Committee (Promotionsvorsitz) *J. Diebold*, 2015-11-27.
- Ph.D. Committee (Promotionsvorsitz) *E. Strekalovskiy*, 2015-11-24.
- Ph.D. Committee (Promotionsvorsitz) *J. Vogel*, 2015-09-25.
- Further Education: Participation in TUM ProLehre Teaching Module T1, 2015-06-29.
- Ph.D. Committee (Promotionsvorsitz) *C. Hennersperger*, 2015-06-19.
- TUM *Institute for Advanced Studies* member since 2015-05-01.
- Ph.D. Committee (Promotionsvorsitz) *L. Chen*, 2015-01-22.
- Ph.D. Committee (Promotionsvorsitz) *M. Klodt*, 2014-12-18 .
- Ph.D. Committee (Promotionsvorsitz) *P. Maier*, 2014-09-06.
- Integration of flow solver into open-source animation package *Blender* (http://blender.org), ongoing since August 2014.
- Submission *"Simulated Crown-Splash"* accepted for the TUM IAS art exhibition, 2014-07-08.
- Support of Emmy-Noether Group application (to be hosted by TUM) for *S. Weissmann*.
- Ph.D. Committee (Promotionsvorsitz) *M. Lieb*, 2014-07-08.
- Development of open-source flow solver *mantaflow* (http://mantaflow.com), ongoing since July 2013.