

# Michael Birsak

---

## Personal Data

Date of Birth September 20, 1984  
Nationality Austria

## Contact Details

Home Andaleeb Lane, P-7233, KAUST, Thuwal, 23955, KSA  
Lab KAUST, Building 1, Level 2, Room 2224, 23955, KSA  
Mobile +966 5 44700061  
E-Mail michael.birsak@kaust.edu.sa  
Web Google Scholar, LinkedIn

## Education

- 10/2018 **PhD / Doktor der Technischen Wissenschaften, TU Wien.**  
Focus on Discrete Optimization and in Particular Mixed Integer Programming for the Creation of Various Types of Imagery (with distinction)
- 06/2012 **Master in Visual Computing, TU Wien.**  
Focus on Rendering and Modeling (with distinction)
- 05/2009 **Bachelor in Media Informatics, TU Wien.**  
Focus on Computer Graphics

## Research Experience

- 06/2022- Present **Research Scientist with Prof. Peter Wonka, KAUST.**  
Research on Artificial Intelligence for Material Models, Research on 2D and 3D Modeling Capabilities of Large Language Models
- 03/2019-06/2022 **Postdoctoral Research with Prof. Peter Wonka, KAUST.**  
Research on Deep Learning to Find Novel Approaches for the Synthesis of Graph Structures (e.g. Street Networks)
- 09/2012-01/2019 **Graduate Research with Prof. Michael Wimmer, TU Wien.**  
Research on Discrete Optimization for the Creation of Navigational and Artistic Imagery, Research on Reduced Order Shape Optimization for Digital Fabrication
- 05/2011-06/2012 **Undergraduate Research with Prof. Michael Wimmer, TU Wien.**  
Research on Seamless Texturing of Archaeological Artifacts
- 12/2008-05/2009 **Undergraduate Research with Dr. Hannes Kaufmann, TU Wien.**  
Research on the Effects and Possibilities of Juggling in a Virtual Environment

---

## Teaching Experience

- 2022-2025 **Lab Course Organizer at KAUST for 'Deep Learning for Visual Computing'**, (4 semesters).
- 2019-2021 **Teaching Assistant at KAUST for 'Deep Learning for Visual Computing'**, (3 semesters).
- 2017-2018 **Teaching Assistant at TU Wien for 'Geometry in Computer Science'**, (2 semesters).
- 2012-2016 **Computer Graphics Seminar**, (4 semesters).
- 2013-2016 **Scientific Work Seminar**, (4 semesters).
- 2013-2016 **Internships (2), Bachelor Theses (2) and Master Theses (1)**.  
Supervising assistant

---

## Invited Talks

- 04/06/2018 **Beautiful Paths instead of Shortest Paths**, ViennaGeo Meetup #2.

---

## Awards and Honors

- 2018 Best Paper Honorable Mention Pacific Graphics 2018

---

## Theses

- Dissertation *Discrete Optimization on Graphs and Grids for the Creation of Navigational and Artistic Imagery*  
Supervisor Associate Prof. Dipl.-Ing. Dipl.-Ing. Dr.techn. Michael Wimmer  
Description This work was concerned with a thorough examination of the capabilities of integer programming to create a diversity of image-based output.
- Master Thesis *Coloring Meshes of Archaeological Datasets*  
Supervisor Associate Prof. Dipl.-Ing. Dipl.-Ing. Dr.techn. Michael Wimmer  
Description This work was concerned with the automatic and artifact-free texturing of archaeological data.
- Bachelor Thesis *Juggling in a Virtual Environment*  
Supervisor Privatdoz. Mag.rer.nat. Dr.techn. Hannes Kaufmann  
Description This work was concerned with the effects and possibilities of juggling in a virtual environment.

---

## International Program Committee Memberships

- Eurographics 2026, 2022, 2021 (Annual Conference of the European Association for Computer Graphics)
- Eurasia Graphics 2021, 2020 (International Conference on Computer Graphics)

- Pacific Graphics 2023 (Pacific Conference on Computer Graphics and Applications)  
SMIFASE 2021, 2020, 2019 (Shape Modeling International - Fabrication and Sculpting Event)  
Web3D 2021 (The 26th International ACM Conference on 3D Web Technology)

## Journal Reviewing

- ACM TOG 2017 (Transactions on Graphics, ACM)  
CGF 2014 (Computer Graphics Forum, Wiley)  
IEEE TVCG 2019, 2017 (Trans. on Visualization and Computer Graphics, IEEE)

## Conference Reviewing

- ACM Siggraph 2026, 2025, 2022, 2020, 2016 (ACM Annual Conference on Computer Graphics and Interactive Techniques)  
ACM Siggraph Asia 2021 (ACM Siggraph Conference and Exhibition on Computer Graphics and Interactive Techniques in Asia)  
ACM i3D 2017 (Symposium on Interactive 3D Graphics and Games)  
Eurographics 2020, 2017, 2016 (Annual Conference of the European Association for Computer Graphics)

## Publications

Fedor Rodionov, Abdelrahman Eldesokey, Michael Birsak, John Femiani, Bernard Ghanem, and Peter Wonka. *FloorplanQA: A Benchmark for Spatial Reasoning in LLMs using Structured Representations*. Proceedings of the International Conference on Machine Learning (ICML 2026), July 2026

Jian Shi, Michael Birsak, Wenqing Cui, Zhenyu Li, Peter Wonka. *Geometry without Position? When Positional Embeddings Help and Hurt Spatial Reasoning*. arXiv preprint 2601.22231, 2026

Michael Birsak, John Femiani, Biao Zhang, and Peter Wonka. *MatCLIP: Light- and Shape-Insensitive Assignment of PBR Material Models*. ACM Transactions on Graphics (ACM SIGGRAPH 2025). August 2025

Qian Wang, Biao Zhang, Michael Birsak, and Peter Wonka. *MDP: A Generalized Framework for Text-Guided Image Editing by Manipulating the Diffusion Path*. Transactions on Machine Learning Research (TMLR). 2024

Qian Wang, Biao Zhang, Michael Birsak, and Peter Wonka. *InstructEdit: Improving Automatic Masks for Diffusion-based Image Editing With User Instructions*. arXiv preprint 2305.18047. 2023

Qian Wang, Yiqun Wang, Michael Birsak, and Peter Wonka. *BlobGAN-3D: A Spatially-Disentangled 3D-Aware Generative Model for Indoor Scenes*. arXiv preprint 2303.14706, 2023

Michael Birsak, Wamiq Para, Tom Kelly, and Peter Wonka. *Large-Scale Auto-Regressive Modeling Of Street Networks*. arXiv preprint 2209.00281. 2022

Stefan Pillwein, Kurt Leimer, Michael Birsak, and Przemyslaw Musialski. *On Elastic Geodesic Grids and their Planar to Spatial Deployment* ACM Transactions on Graphics (ACM SIGGRAPH 2020). August 2020

Kurt Leimer, Michael Birsak, Florian Rist, and Przemyslaw Musialski. *Sit & Relax: Interactive Design of Body-Supporting Surfaces*. Computer Graphics Forum (Pacific Graphics 2018). October 2018

Michael Birsak, Przemyslaw Musialski, Peter Wonka, and Michael Wimmer. *Dynamic Path Exploration on Mobile Devices*. IEEE Transactions on Visualization and Computer Graphics. May 2018

Michael Birsak, Florian Rist, Peter Wonka, and Przemyslaw Musialski. *String Art: Towards Computational Fabrication of String Images*. Computer Graphics Forum (Proc. EUROGRAPHICS 2018). April 2018

Przemyslaw Musialski, Christian Hafner, Florian Rist, Michael Birsak, Michael Wimmer, and Leif Kobbelt. *Non-Linear Shape Optimization Using Local Subspace Projections*. ACM Transactions on Graphics (ACM SIGGRAPH 2016). July 2016

Przemyslaw Musialski, Thomas Auzinger, Michael Birsak, Michael Wimmer, and Leif Kobbelt. *Reduced-Order Shape Optimization Using Offset Surfaces*. ACM Transactions on Graphics (ACM SIGGRAPH 2015). August 2015

Michael Birsak, Przemyslaw Musialski, Peter Wonka, and Michael Wimmer. *Automatic Generation of Tourist Brochures*. Computer Graphics Forum (Proc. EUROGRAPHICS 2014). April 2014

Michael Birsak, Przemyslaw Musialski, Murat Arıkan, and Michael Wimmer. *Seamless Texturing of Archaeological Data*. Digital Heritage International Congress (DigitalHeritage). October 2013