

Dr. Ruben Wiersma

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I am a postdoctoral researcher at ETH Zürich in the [Interactive Geometry Lab \(IGL\)](#). My interests include geometry processing, optimization, and machine learning. I received my doctorate *cum laude* from the [CGV group at the TU Delft](#) and interned at Adobe as a research intern, studying material capture with differentiable rendering. I have a soft spot for working with creatives and enjoy working on my own [short films, design and music](#).

SKILLS AND QUALITIES

Cross-disciplinary collaboration • Communication and presentation - [example presentation](#) • Creative thinking • Strong math understanding • Ability to understand and analyze complex systems • Eye for clean, maintainable, and understandable code - [example project](#) • Geometry Processing • Generative AI • Machine Learning • Python • PyTorch • Numpy • JAX • C++ • Mitsuba • Blender • Adobe CC • Git • Linux • macOS

EXPERIENCE

[2024 - Present] **ETH Zürich**, *Postdoctoral Researcher*

- Research on machine learning and geometry processing at the [Interactive Geometry Lab \(IGL\)](#).
- Associate Lecturer in Shape Modelling and Geometry Processing course.

[Summer 2023] **Adobe**, *Research Internship*

- Investigating material and appearance capture, mentored by Valentin Deschaintre and Julien Philip.

[2017] **GeoPhy**, *Development Internship*

- Developed end-to-end machine learning solution for estimating real-estate value.

[2012 - 2022] **Wiersma Brothers, freelance**, *Video producer, graphic designer*

- Founder, working on [short films](#), [graphic design](#) and web development.

TEACHING EXPERIENCE

SGP Graduate School [Deep Learning on Meshes and Point Clouds, spring 2025](#)

- **Course organizer and lecturer** for introductory course on deep learning for 3D data.

ETH Zürich, [Shape Modelling and Geometry Processing, spring 2024](#)

- **Associate Lecturer** for master course of 50 students.

ETH Zürich and TU Delft, BSc, MSc and PhD supervision, 2019-2025

- **Daily supervisor** on 11 BSc research projects (one published), and 3 MSc theses.
- **Collaborator and advisor** for three PhD students.

TU Delft, BK7084 Computational Simulations, 2019-2023

- **Teaching assistant** for BSc elective on computer graphics techniques for architecture students.
- Instruction, assistance to students for lab assignments.
- Modernized assignments.

TU Delft, BSc Machine Learning, 2019

- **Teaching assistant** for BSc course on fundamental machine learning techniques.
- Implemented and wrote course materials (programming assignments, still used as of 2024).

EDUCATION

[2019 - 2024] **TU Delft**, PhD *Computer Graphics Cum Laude*

Supervised by Elmar Eisemann, Klaus Hildebrandt and Joris Dik

- Dissertation: Intrinsic approaches to learning and computing on curved surfaces
- Geometry processing and machine learning (4 SIGGRAPH publications).
- Applications of computer graphics and machine learning for painting analysis (1 journal, 1 conference).
- Responsibilities: lecturing, lab assistance, creating assignments, thesis supervision (10 BSc, 3 MSc).

[2017 - 2019] **TU Delft**, MSc *Computer Science Cum Laude (GPA 4.0)*

- Focus on computer graphics and machine learning. Thesis (grade 9/10) "Harmonic Surface Networks".

[2014 - 2017] **TU Delft**, BSc *Computer Science Cum Laude (GPA 4.0)*

- Focus on multimedia and data science. Thesis on "Automating Valuations for Real-Estate".

[2013 - 2014] **TU Delft**, *Propedeuse Industrial Design Engineering Cum Laude*

SERVICE

[2025 - 2026] **Symposium on Geometry Processing (SGP)**, *Graduate School Chair*

[2025] **SIGGRAPH Asia**, *Conflict of Interest Coordinator*

[2024 - 2025] **Symposium on Geometry Processing (SGP)**, *Committee member*

[2024 - present] **SIGGRAPH Thesis Fast Forward**, *Chair*

[Summer 2022] **MIT Summer Geometry Initiative (SGI)**, *Mentor*

- Mentored fellows of SGI in a project on "Learning on Surfaces"

[2020 - present] **SIGGRAPH research and career development committee**, *Committee member*

- Organized Conference Coffee at SIGGRAPH '21, SIGGRAPH Asia '21 and SIGGRAPH '22.
- Production/writing for website, Thesis Fast Forward, and SIGGRAPH/ToG writing guides.

[2020 - present] **Reviewer**

- SIGGRAPH, SIGGRAPH Asia, ACM Transactions on Graphics, Pacific Graphics, TMAA, Computers & Graphics

[2014 - 2017] **Happietaria, Hartige Samaritaan**, *Restaurant staff manager, PR and communications manager*

- Pop-up restaurant for charity, lasting one month, raised €78.913.

PUBLICATIONS

[12.] **SIGGRAPH '25**, Uncertainty for SVBRDF Acquisition using Frequency Analysis, July 2025

R. Wiersma, J. Philip, M. Hasan, K. Mullia, F. Luan, E. Eisemann, V. Deschaintre

[11.] **SIGGRAPH '25 (journal)**, TetWeave: Isosurface Extraction using On-The-Fly Delaunay Tetrahedral Grids for Gradient-Based Mesh Optimization, July 2025

A. Binninger, **R. Wiersma**, P. Herholz, O. Sorkine-Hornung

[10.] **PhD Thesis** Intrinsic approaches to learning and computing on curved surfaces, October 2024

R. Wiersma

[9.] **SIGGRAPH '23**, A Fast Geometric Multigrid Method for Curved Surfaces, July 2023

R. Wiersma, A. Nasikun (equal contribution); E. Eisemann and K. Hildebrandt

[8.] **Digital Humanities Quarterly**, The case of the golden background, a virtual restoration and a physical reconstruction of the medieval Crucifixion of the Lindau Master (c. 1425), February 2023

L. Tissen, S. Frequin, **R. Wiersma**

[7.] **GCH '22**, A New Baseline for Feature Description on Multimodal Imaging of Paintings **Best Paper**, September 2022

J. vd Toorn, **R. Wiersma**, A. Vandivere, R. Marroquim and E. Eisemann

[6.] **SIGGRAPH '22 (journal)**, DeltaConv: Anisotropic Operators for Geometric Deep Learning on Point Clouds, July 2022

R. Wiersma, A. Nasikun, E. Eisemann and K. Hildebrandt

[5.] **CVPR '22**, Deep Vanishing Point Detection: Geometric priors make dataset variations vanish, July 2022

Y. Lin, **R. Wiersma**, S. L. Pintea, K. Hildebrandt, E. Eisemann and J. C. van Gemert

[4.] **SIGGRAPH '20 (journal)**, CNNs on Surfaces using Rotation-Equivariant Features, July 2020

R. Wiersma, E. Eisemann and K. Hildebrandt

[3.] **Heritage Science**, Revealing unique inscriptions of in Doodencel 601 of the Oranjestad hotel, July 2020

J. Wembe, R. van den Brink, E. Mooldijk, N. Feirabend, **R. Wiersma**, J. Sietsma and J. Dik

[2.] **SIGCSE '20**, Are We Consistent? The Effects of Digitized Exams Grading, February 2020

G. Migut and **R. Wiersma**

[1.] **Master's thesis**, Harmonic Surface Networks, October 2019

R. Wiersma

GRANTS

Google Cloud Research credits

October 2019, October 2020, May 2024

TALKS

1st July 2025, **Symposium on Geometry Processing Graduate School**

Deep Learning on Meshes and Point Clouds

5th February 2025, **Mathematical Imaging and Surface Processing Workshop Oberwolfach**

Intrinsic Approaches to Learning and Computing on Curved Surfaces

March 2024, **INRIA Sophia Antipolis**

Invited talk: Intrinsic Approaches to Learning and Computing on Curved Surfaces

February 2024, **ETH Zürich**

Invited talk: Intrinsic Approaches to Learning and Computing on Curved Surfaces

February 2024, **ISTA Vienna**

Invited talk: Intrinsic Approaches to Learning and Computing on Curved Surfaces

October 2023, **Johns Hopkins University**

Lecture: Introduction to Blender for Students in Computer Graphics

6th April 2022, **UChicago 3DL group**

Invited talk: DeltaConv: Anisotropic Operators for Geometric Deep Learning on Point Clouds

29th September 2021, **Mathematics and Art symposium at DMV ÖMG Annual Conference 2021**

Symposium talk: Communicating Perspective in 17th Century Paintings to Modern Audiences.

17th May 2021, **Utrecht University**

Lecture on applications of computer graphics to painting analysis for bachelor students in art history.

27th September 2020, **PI Lab TU Delft**

Seminar talk: applications of computer graphics to painting analysis.

14th May 2020, **Stanford Guibas Lab**

Invited talk: CNNs on Surfaces using Rotation-Equivariant Features