# Jakob Troidl

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## About

I am a Ph.D. student in computer science at Harvard University, advised by Hanspeter Pfister. I am deeply interested in data visualization and computational neuroscience. My latest research focuses on applications of data visualization in connectomics and climate sciences. When I am not prototyping new ideas, I enjoy rowing, reading philosophy, hiking, or just being in nature.

## Education

**Harvard University** — Cambridge, MA
Ph.D. in Computer Science, Advisor: Prof. Hanspeter Pfister — 2021–2027
- Focus: Data Visualization, Computational Neuroscience

**TU Wien** — Vienna, Austria
M.Sc. in Visual Computing, Advisor: Prof. Eduard Gröller — 2019–2021
- Focus: Data Visualization, Biomedical Imaging, Computer Vision
- GPA: 1.1/1.0

**TU Wien** — Vienna, Austria
B.Sc. with Honors in Medical Informatics, GPA: 1.45/1.0 — 2015–2019
- Thesis: Flow Visualization on Curved Manifolds
- Among the top 5% of all computer science students

## Experience

**Harvard University** — Cambridge, MA
Research Assistant with Prof. Hanspeter Pfister — 09/2021 - present
- Visualization of Large-Scale Biomedical Data
- Towards Efficient and Scalable Visual Analysis Tools for Connectomics

**King Abdullah University of Science & Technology (KAUST)** — Thuwal, Saudi Arabia
Research Intern with Prof. Markus Hadwiger — 02/2019 - 05/2019
- Observer Relative Flow Visualization in Curved Spaces
- Co-authored a publication which won the SciVis Best Paper Award at IEEE VIS 2020

**Brainlab AG** — Munich, Germany
Research Intern — 08/2018 - 01/2019
- Path Tracing for Realtime 3D Medical Visualization
- Mixed Reality for 3D Medical Visualization

**Jetsam GmbH** — Regensburg, Germany
Software Development Intern — 08/2017 - 09/2017
- Developed a face recognition system for marketing purposes

## Publications

[1] **J. Troidl**, S. Warchol, J. Choi, J. Matelsky, N. Dhanyasi, X. W. Wang, B. Wester, D. Wei, J. Lichtman, H. Pfister, and J. Beyer, "Vimo: Visual Analysis of Neuronal Connectivity Motifs", in *under submission*, 2023.

[2] J. Beyer*, **J. Troidl***, S. Boorboor, M. Hadwiger, A. Kaufman, and H. Pfister, "A Survey of Visualization and Analysis in High-Resolution Connectomics", in *Computer Graphics Forum*, Wiley Online Library, vol. 41, 2022, *indicates equal contribution.*

[3] **J. Troidl**, C. Cali, E. Gröller, H. Pfister, M. Hadwiger, and J. Beyer, "Barrio: Customizable Spatial Neighborhood Analysis and Comparison for Nanoscale Brain Structures", *Computer Graphics Forum (Proceedings Eurographics/IEEE Symposium on Visualization, Eurovis 2022*, vol. 41, no. 3, 2022.

[4] P. Velicky, E. Miguel, J. M. Michalska, D. Wei, Z. Lin, J. F. Watson, **J. Troidl**, J. Beyer, Y. Ben-Simon, C. Sommer, *et al.*, "Saturated reconstruction of living brain tissue", *bioRxiv*, 2022.

[5] P. Rautek, M. Mlejnek, J. Beyer, **J. Troidl**, H. Pfister, T. Theußl, and M. Hadwiger, "Objective Observer-Relative Flow Visualization in Curved Spaces for Unsteady 2D Geophysical Flows", *IEEE Transactions on Visualization and Computer Graphics*, 2020.

## Teaching

- **Head Teaching Fellow** for Extension School Students (DCE) at Harvard University — Fall 2022
  *CS171 - Visualization*
- **Teaching Fellow** at TU Wien — Fall 2020
  *Selected Chapters from Medical Visualization*
- **Teaching Fellow** at TU Wien — Spring 2017, Spring 2018
  *Introduction to Visual Computing*
- **Teaching Fellow** at TU Wien — Fall 2017
  *Introduction to Computer Engineering*

## Skills

- **Coding:** Python, Java-Script, Matlab, HTML, CSS, C++, Java
- **Tools:** Unity, QT, CMake, Latex

## Languages

English, German

## Scholarships and Awards

- ILW Best Master Thesis Award in informatics for life sciences, German Informatics Society and German Association for Medical Informatics, Biometry and Epidemiology. — 2022
- 6-year PhD fellowship, Harvard University — 2021
- Best SciVis Paper, IEEE VIS 2020 (among the best 3 papers out of 211 accepted papers) — 2020
- Scholarship, Austrian Marshall Plan Foundation (9.100$) — 2020
- Bachelor with Honors, TU Wien (among the top 5% of CS students at TU Wien) — 2020
- Short-term grant for scientific work abroad, TU Wien (3.100$) — 2020
- Merit Based Scholarship, TU Wien (1.000$) — 2018

## References

- **Hanspeter Pfister**, An Wang Professor of Computer Science, Harvard University
  *pfister@g.harvard.edu*
- **Eduard Gröller**, Full Professor, TU Wien
  *groeller@cg.tuwien.ac.at*
- **Markus Hadwiger**, Full Professor, KAUST
  *markus.hadwiger@kaust.edu.sa*