

Timo Probst

Research Assistant
Chair of Computer Graphics, Department for Computer Science
University of Freiburg, Germany

✉ probstt@informatik.uni-freiburg.de  Personal Website  LinkedIn  Google Scholar

EDUCATION

Ph.D. Student <i>Chair of Computer Graphics, Department of Computer Science</i> <i>Supervisor: Matthias Teschner</i>	University of Freiburg, Germany 2019 – 2021
M.Sc. in Computer Science <i>Graduated with honors.</i> <i>Thesis title: Global Contact Handling and Dry Friction for Particle-based Rigid Bodies.</i>	University of Freiburg, Germany 2019 – 2021
B.Sc. in Computer Science <i>Thesis title: Matrix-free PPE Solver for SPH Fluids</i>	University of Freiburg, Germany 2015 – 2019

EMPLOYMENT

Research Assistant <i>Chair of Computer Graphics, Department of Computer Science</i>	University of Freiburg, Germany 2021 – ...
Student Assistant <i>Chair of Computer Graphics, Department of Computer Science</i>	University of Freiburg, Germany 2019 – 2021
Tutor <i>Python for Biologists, Faculty of Biology</i>	University of Freiburg, Germany 2019

PUBLICATIONS

- [1] Timo Probst and Matthias Teschner. “Unified Pressure, Surface Tension and Friction for SPH Fluids”. In: *ACM Trans. Graph.* 44.1 (Dec. 2024). ISSN: 0730-0301. DOI: 10.1145/3708034.
- [2] Timo Probst and Matthias Teschner. “Monolithic Friction and Contact Handling for Rigid Bodies and Fluids Using SPH”. In: *Computer Graphics Forum* 42.1 (2023), pp. 155–179. DOI: 10.1111/cgf.14727.

INVITED TALKS

SIGGRAPH 2025 <i>Unified Pressure, Surface Tension and Friction for SPH Fluids</i>	Vancouver, Canada August 2025
FIFTY2 <i>Simulating Water Droplets with SPH</i> <i>Friction and Contact Handling for Rigid Bodies and Fluids Using SPH</i>	Freiburg, Germany December 2024 March 2023
Eurographics 2023 <i>Monolithic Friction and Contact Handling for Rigid Bodies and Fluids Using SPH</i>	Saarbrücken, Germany May 2023

REVIEWS

ACM SIGGRAPH	2025, 2026
ACM SIGGRAPH Asia	2026
IEEE Transactions on Visualization and Computer Graphics	2023, 2025, 2026
Eurographics	2026
ACM SIGGRAPH / Eurographics Symposium on Computer Animation	2026
Journal of Computational Physics	2025, 2026
Nuclear Engineering and Design	2025

GRANTS

Deutschlandstipendium

Selected based on academic performance and social commitment.

Germany

2019 – 2020

SUPERVISION

Graduate Students

Julian Karrer

University of Freiburg
2026

Joshua Fässler

Strong Rigid-Fluid Coupling using a Unified Implicit SPH Solver

University of Freiburg
2024 – 2025

Philipp Sandweg

Implicit SPH Simulation of Elastic Solids in a Multi-Material Framework

University of Freiburg
2023 – 2024

Andrés Sandoval

Global Matrix-free Pressure Solver for Performant SPH Fluid Simulations

University of Freiburg
2022 – 2023

Undergraduate Students

Johann-Frederik Isele

University of Freiburg
2026

Marius Hägele

Implementation and evaluation of a 2D state equation SPH fluid solver

University of Freiburg
2025 – 2026

Georgij Hergenröder

Smoothed Particle Hydrodynamics Fluid Simulation in 2D - Implementation and Evaluation

University of Freiburg
2025 – 2026

SKILLS

Languages: Strong reading, writing and speaking competencies for English, German

Coding: C++, Python, C, C#, OpenCL, SYCL, CUDA

Frameworks: NumPy, Godot, Unreal Engine, Blender

