

Christian Hafner

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Work Institute of Science and Technology Austria
Am Campus 1, 3400 Klosterneuburg

CAREER

- 2023 – **Research Engineer**, *Computer Graphics & Physics Simulation*
Institute of Science and Technology Austria (ISTA)
Wojtan Group
- 2017 – 2023 **PhD Candidate**, *Computational Fabrication*
Institute of Science and Technology Austria (ISTA)
Supervisor: Bernd Bickel
Thesis committee: Chris Wojtan, Doug L. James, David I. W. Levin
- 2015 – 2017 **Research Assistant**, *Computer Graphics & Applied Geometry*
TU Wien, Austria
- 2013 – 2015 **Master of Science, pass with distinction**, *Visual Computing*
TU Wien, Austria
Thesis title: Optimization of Natural Frequencies for Fabrication-Aware Shape Modeling
Supervisor: Michael Wimmer
- 2009 – 2013 **Bachelor of Science, pass with distinction**, *Software & Information Engineering*
TU Wien, Austria

PUBLICATIONS

- Hafner C.**, Bickel B. (2023).
The Design Space of Kirchhoff Rods. *Transactions on Graphics (to be presented at Siggraph Asia 2023)*.
- Zhenyuan L., Piovarči M., **Hafner C.**, Charrondière R., Bickel B. (2023)
Directionality-Aware Design of Embroidery Patterns. *Eurographics 2023 Technical Paper*.
- Hafner C.**, Bickel B. (2021).
The Design Space of Plane Elastic Curves. *Siggraph 2021 Technical Paper*.
- Jeschke S., **Hafner C.**, Chentanez N., Macklin M., Müller-Fischer M., Wojtan C. (2020).
Making Procedural Water Waves Boundary-Aware. *SCA 2020 Technical Paper*.
- Hafner C.**, Schumacher C., Knoop E., Auzinger T., Bickel B., Bäcker M. (2019).
X-CAD: Optimizing CAD Models with Extended Finite Elements. *Siggraph Asia 2019 Technical Paper*.
- Schreck C., **Hafner C.**, Wojtan C. (2019).
Fundamental Solutions for Water Wave Animation. *Siggraph 2019 Technical Paper*.
- Musialski P.*, **Hafner C.***, Rist F., Birsak M., Wimmer M., Kobbelt L. (2016). (*** joint 1st authors**)
Non-Linear Shape Optimization Using Local Subspace Projections. *Siggraph 2016 Technical Paper*.
- Hafner C.**, Musialski P., Auzinger T., Wimmer M., Kobbelt L. (2015).
Optimization of Natural Frequencies for Fabrication-Aware Shape Modeling. *Siggraph 2015 Poster*.

AWARDS

2016	State Award for Best Master's and Diploma Theses, <i>Republic of Austria</i>
2016	Best Speaker Award (Information and Communication Technology), <i>Vienna young Scientists Symposium, Austria</i>
2013	Best Demo (Course Project, Real-Time Rendering), <i>TU Wien, Computer Graphics Group</i>
2013	Best Visualization (Course Project, Visualization 2), <i>TU Wien, Visualization Group</i>
2012	Best Game (Course Project, Computer Graphics 2), <i>TU Wien, Computer Graphics Group</i>

TEACHING

Spring 2022	Computational Aspects of Digital Fabrication, <i>TU Wien (Lecturer)</i>
Spring 2020	Data Science and Scientific Computing Track Core Course, <i>IST Austria</i> (Teaching Assistant, Student evaluation 4.9/5)
Spring 2019	Data Science and Scientific Computing Track Core Course, <i>IST Austria</i> (Teaching Assistant, Student evaluation 4.6/5)
Fall 2016	Modeling in Computer Graphics, <i>TU Wien (Teaching Assistant)</i>
Spring 2016	Algorithms for Real-Time Rendering, <i>TU Wien (Teaching Assistant)</i>

INTERSHIPS AND ROTATIONS

Jun – Oct 2018	Internship with Moritz Bächer, <i>Disney Research Zurich</i> (Developed simulation and shape optimization method for CAD models)
Mar – Apr 2018	Rotation with Chris Wojtan, <i>IST Austria</i> (Developed real-time simulation of gravity-capillary rings on water)
Jan – Feb 2018	Rotation with Herbert Edelsbrunner, <i>IST Austria</i> (Introduction to simplicial homology)
Oct – Nov 2017	Rotation with Bernd Bickel, <i>IST Austria</i> (Developed computational tool for designing buckling behavior of elastic objects)

LEADERSHIP, SERVICE, AND OUTREACH

Aug 2021	Project mentor at MIT's Summer Geometry Institute 2021 (Mentored student research project)
Aug 2019	Talk at 3D printing summer camp (Interactive talk for children aged 12-16)
May 2019	OpenCampus@IST (Presented 3D printing exhibition)
Sep 2017	European Researchers Night (Public outreach about 3D printing research)

CONFERENCE VISITS

Oct 16-19, 2022	Workshop Graphyz 2 (Presented ongoing work)
Sep 20-25, 2021	Geometry Workshop Obergurgl 2021 (Presented ongoing work)
Aug 9-13, 2021	Siggraph 2021 (Presented technical paper)
Aug 17-28, 2020	Siggraph 2020
Nov 17-20, 2019	Siggraph Asia 2019 (Presented technical paper)
Oct 24-25, 2019	Workshop Graphyz
Jul 28 – Aug 1, 2019	Siggraph 2019 (Presented fast forward)
May 6-10, 2019	Eurographics 2019
Aug 12-16, 2018	Siggraph 2018
Apr 16-20, 2018	Eurographics 2018
Jul 24-28, 2016	Siggraph 2016 (Presented technical paper)