DANIEL HAEHN

103 Holden Green
Cambridge, MA 02138

+1.617.701.root
haehn@seas.harvard.edu
https://danielhaehn.com

I am a biomedical imaging and visualization researcher who investigates how the study of brain connectivity and machine perception can help advance the understanding of biologically inspired artificial intelligence.

Education

present — **PhD Candidate in Computer Science, Harvard University**
Analyzing Brain Connectivity and Computing Machine Perception, expected graduation May 2019
Advisor: Hanspeter Pfister
Committee: Steven Gortler, Finale Doshi-Velez, Scott Kuindersma, Jeff W. Lichtman

2010 — **Diplom (MSc) in Medical Computer Science, University of Heidelberg**
Signal- and Image Processing
Thesis: Coronary Artery Centerline Extraction
Advisors: Hartmut Dickhaus, Ron Kikinis

2007 — **Vordiplom (BSc) in Medical Computer Science, University of Heidelberg**
with Honors, rank #1 of class, all study fees waived

Experience

Summer 2017 — **Apple, Inc.**
Research Intern in Data Science

Summer 2014 — **Mental Canvas**
Research Intern in Computer Graphics

2011–2013 — **Boston Children's Hospital**
Research Software Developer III, Fetal Neonatal Neuroimaging and Developmental Science Center

2010–2011 — **University of Pennsylvania**
Research Scholar, Section for Biomedical Image Analysis

Publications

2018 — Daniel Haehn, James Tompkin, and Hanspeter Pfister. Evaluating 'Graphical Perception' with CNNs. *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS)*.

2018 — Daniel Haehn, Verena Kaynig, James Tompkin, Jeff W. Lichtman, and Hanspeter Pfister. Guided Proofreading of Automatic Segmentations for Connectomics. *IEEE Computer Vision and Pattern Recognition (CVPR)*.

2017 — Daniel Haehn, John Hoffer, Brian Matejek, Adi Suissa-Peleg, Ali K Al-Awami, Lee Kamentsky, Felix Gonda, Eagon Meng, William Zhang, Richard Schalek, Alyssa Wilson, Toufiq Parag, Johanna Beyer, Verena Kaynig, Thouis R. Jones, James Tompkin, Markus Hadwiger, Jeff W. Lichtman, and Hanspeter Pfister. Scalable Interactive Visualization for Connectomics. *MDPI Informatics*.

2017 — Brian Matejek, Daniel Haehn, Fritz Lekschas, Michael Mitzenmacher, and Hanspeter Pfister. Compresso: Efficient Compression of Segmentation Data For Connectomics. *Medical Image Computing and Computer-Assisted Intervention (MICCAI)*.

2017 — Felix Gonda, Verena Kaynig, Thouis R. Jones, Daniel Haehn, Jeff W. Lichtman, Toufiq Parag, and Hanspeter Pfister. ICON: An Interactive Approach to train Deep Neural Networks for Segmentation of Neuronal Structures. *IEEE International Symposium on Biomedical Imaging (ISBI)*.

2017 — Rudolph Pienaar, Ata Turk, Jorge Bernal-Rusiel, Nicolas Rannou, Daniel Haehn, P. Ellen Grant, and Orran Krieger. CHIPS–A Service for Collecting, Organizing, Processing, and Sharing Medical Image Data in the Cloud. *VLDB Workshop on Data Management and Analytics for Medicine and Healthcare*.

2016 Adi Suissa-Peleg, Daniel Haehn, Seymour Knowles-Barley, Verena Kaynig, Thouis R. Jones, Alyssa Wilson, Richard Schalek, Jeff W. Lichtman, and Hanspeter Pfister. Automatic Neural Reconstruction from Petavoxel of Electron Microscopy Data. *Microscopy and Microanalysis*.

2016 Ali K Al-Awami, Johanna Beyer, Daniel Haehn, Narayanan Kasthuri, Jeff W Lichtman, Hanspeter Pfister, and Markus Hadwiger. NeuroBlocks–Visual Tracking of Segmentation and Proofreading for Large Connectomics Projects. *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS)*.

2016 Richard Schalek, Dong Lee, Narayanan Kasthuri, Adi Peleg, Thouis R. Jones, Verena Kaynig, Daniel Haehn, Hanspeter Pfister, David Cox, and Jeff W. Lichtman. Imaging a 1 mm^3 Volume of Rat Cortex using a MultiBeam SEM. *Microscopy and Microanalysis*.

2015 Kiho Im, Banu Ahtam, Daniel Haehn, Jurriaan M. Peters, Simon K. Warfield, Mustafa Sahin, and P. Ellen Grant. Altered Structural Brain Networks in Tuberous Sclerosis Complex. *Cerebral Cortex*.

2015 Rudolph Pienaar, Nicolas Rannou, Jorge Bernal, Daniel Haehn, and P. Ellen Grant. ChRIS–A web-based Neuroimaging and Informatics System for Collecting, Organizing, Processing, Visualizing and Sharing of Medical Data. *IEEE Engineering in Medicine and Biology Society (EMBC)*.

2014 Daniel Haehn, Seymour Knowles-Barley, Mike Roberts, Johanna Beyer, Narayanan Kasthuri, Jeff W. Lichtman, and Hanspeter Pfister. Design and Evaluation of Interactive Proofreading Tools for Connectomics. *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS)*.

2013 Daniel Haehn, Nicolas Rannou, P. Ellen Grant, and Rudolph Pienaar. Slice:Drop – Collaborative Medical Imaging in the Browser. *ACM SIGGRAPH Computer Animation Festival*.

2012 Daniel Haehn, Nicolas Rannou, Banu Ahtam, P. Ellen Grant, and Rudolph Pienaar. Neuroimaging in the Browser using the X Toolkit. *Frontiers in Neuroinformatics*.

2012 Myong-sun Choe, Silvia Ortiz-Mantilla, Nikos Makris, Matt Gregas, Janine Bacic, Daniel Haehn, David Kennedy, Rudolph Pienaar, Verne S. Caviness Jr, April A. Benasich, and P. Ellen Grant. Regional Infant Brain Development: an MRI-based Morphometric Analysis in 3 to 13 month olds. *Cerebral Cortex*.

2012 Arno Klein, Forrest S. Bao, Yrjö Häme, Eliezer Stavsky, Joachim Giard, Daniel Haehn, Nolan Nichols, and Satrajit S. Ghosh. Mindboggle: Automated Human Brain MRI Feature Extraction, Labeling, Morphometry, and Online Visualization. *Frontiers in Neuroinformatics*.

2012 Arno Klein, Nolan Nichols, and Daniel Haehn. Mindboggle 2 interface: Online Visualization of Extracted Brain Features with XTK. *Frontiers in Neuroinformatics*.

Mentoring

2018–present Vincent Casser, Graduate student (MSc) at Harvard University
2018–present Ian Svetkey, Pre-College student at Harvard University
2015–2017 John Hoffer and Eagon Meng, Undergraduate students at Harvard University
2015–2016 William Zhang and Omar Shaikh, Pre-College students at Harvard University
2013 Jay Andrew Robinson and Emily Seibring, Pre-College students at Boston Children's Hospital

Teaching

2018–present TEALS Volunteer for AP Computer Science at Cambridge Rindge and Latin School
2016 Technical Assistant for the Deep Learning mini-course at the Harvard IACS Compute Fest
2015 Teaching Fellow for the Harvard CS171 Visualization course
2008 Workshop for Advanced Microcontroller Programming, University of Bratislava, Slovakia
2008 Workshop for Microcontroller Programming at the University of Tbilisi, Georgia (Europe)
2004-2008 Teaching Assistant for Microcontrollers in EXperiment and LEarning (MEXLE), Heilbronn University, Germany

Awards

2015–2019	Winkler Scholarship
2013–2019	Harvard University Fellowship
2013	Realtime Live! presentation of Slice:Drop at SIGGRAPH
2012	INCF Neuroinformatics Spotlight Presentation of XTK
2012	Mozilla Hacks WebGL Dev Derby Runner-up for Slice:Drop
2012	Visualizing.org Challenge Winner with Slice:Drop
2010	1st Prize for End User Tutorial at the National Alliance of Medical Image Computing (NA-MIC)
2008–2009	Karl Steinbuch Foundation Scholarship
2007–2009	Thomas Gessmann Foundation Scholarship

Service and Outreach

2018–present	Coach for Cambridge Youth Soccer
2018	Volunteer+Presentation Facilitator at the Cambridge 8th Grade Science & Engineering Showcase
2018–present	Reviewer for *Manning Publications*
2016–present	Reviewer for *Frontiers in Neuroinformatics*, *ISMRM*, *Neuroinformatics*, *SIGCHI*
2013	Technical Reviewer for *Matsuda and Lea: WebGL Programming Guide, Addison-Wesley*
2018	Invited speaker at IBM Research (AI Systems Day): *Evaluating 'Graphical Perception' with CNNs*
2018	Invited speaker at Brown CS: *Analyzing Brain Connectivity and Computing Machine Perception*
2016	Invited speaker at IEEE Vis Doctoral Colloquium: *Proofreading for Connectomics*
2014	Invited speaker at MIT Computer Graphics Group: *Web-based Visualization of Scientific Data*
2013	Invited speaker at Visualizing Biological Data (VIZBI): *Physiology & Function*
2012	Invited speaker at WebGL Camp Orlando: *WebGL for Baby Brains*
2014–present	Principal Investigator for multiple IRB approved research studies by the Harvard Human Research Protection Program
2007–2010	President of the Student Computer Club at Heilbronn University, StuWoNet e.V.

My Erdős Number is 3.