

Thomas Torsney-Weir

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Website: <http://www.tomtorsneyweir.com>

Visualization researcher with interest in visual analysis in multi-dimensional continuous spaces and understanding complex models.

Journal publications

Torsney-Weir, Thomas, Torsten Möller, Michael Sedlmair, and R. Mike Kirby. "Hypersliceplorer: Interactive visualization of shapes in multiple dimensions," *Computer Graphics Forum*. 2018.

Torsney-Weir, Thomas, Michael Sedlmair, and Torsten Möller. "Sliceplorer: 1D slices for multi-dimensional continuous functions," *Computer Graphics Forum*. 2017.

Torsney-Weir, Thomas, Steven Bergner, Derek Bingham, and Torsten Möller. "Predicting the interactive rendering time threshold of Gaussian process models with HyperSlice," *IEEE Transactions on Visualization and Computer Graphics*. 2017.

Pajer, Stephan, Mark Streit, Thomas Torsney-Weir, Florian Spechtenhauser, Torsten Möller, and Harald Piringer. "WeightLifter: Visual weight space exploration for multi-criteria decision making," *IEEE Transactions on Visualization and Computer Graphics*. 2016.

Kainz, Bernhard, Markus Steinberger, Wolfgang Wein, Maria Kuklisova-Murgasova, Christina Malamateniou, Kevin Keraudren, Thomas Torsney-Weir, et al. "Fast volume reconstruction from motion corrupted stacks of 2D slices," *IEEE Transactions on Medical Imaging*. 2015.

Torsney-Weir, Thomas, Ahmed Saad, Torsten Möller, Britta Weber, Hans-Christian Hege, Jean-Marc Verbavatz, and Steven Bergner. "Tuner: Principled parameter finding for image segmentation algorithms using visual response surface exploration," *IEEE Transactions on Visualization and Computer Graphics*. 2011.

Conference publications

Torsney-Weir, Thomas, Shahrzad Afroozeh, Michael Sedlmair, and Torsten Möller. "Risk fixers and sweet spotters: A study of the different approaches to using visual sensitivity analysis in an investment scenario," *EuroVis 2018 - short papers*. 2018.

Torsney-Weir, Thomas, Michael Sedlmair, and Torsten Möller. "Decision making in uncertainty visualization" 2015.

Other publications

Torsney-Weir, Thomas. "Visual analysis of high-dimensional parameter spaces" 2012.

Torsney-Weir, Thomas, Ahmed Saad, Torsten Möller, Britta Weber, Hans-Christian Hege, and Jean-Marc Verbavatz. *PRESM: Principled parameter finding for image segmentation algorithms using visual response surface exploration* 2011.

Invited talks

January 10, 2017

“Visualization of machine learning algorithms.” JKU Linz, Austria.

January 8, 2017

“Tuner”, MedVis 2, TU Wien, Vienna, Austria.

November 30, 2017

“Slicing multi-dimensional spaces.” Discrete geometry seminar, Freie University Berlin, Germany.

May 6, 2014

“scala-swing.” Vienna Scala meetup group, Vienna, Austria.

September 19, 2013

“Tuner.” Visualization and virtual reality research group, University of Leeds, Leeds, UK.

June 20, 2012

“Tuner.” MADAI workshop, Duke University, Durham, NC.

September 16, 2011

“Visualization of computer models.” MoCCSy Graduate Seminar, Burnaby, BC.

Education

2018

PhD in Computer Science. University of Vienna, Vienna, Austria

2012

MSc in Computer Science. Simon Fraser University, Burnaby, BC, Canada

2002

BS in Computer Science. Georgetown University, Washington, DC, USA

Scientific activities

2016 – present

Student volunteer chair IEEE Visualization conference

2018

Program committee member, International EuroVis workshop on visual analytics (EuroVA)

2018

Program committee member, Workshop on Exploratory Search and Interactive Data Analytics (ES-IDA 2018)

2016 – 2017

Reviewer, International EuroVis workshop on visual analytics (EuroVA)

2012 – 2017

Reviewer, IEEE Transactions on Visualization and Computer Graphics

2012 – 2014

Reviewer, EG/VGTC Conference on visualization (EuroVis)

2014

Program committee member, International Conference on Intelligent User Interfaces

2014

Reviewer, Computers and Graphics

Teaching

Fall 2011

Teaching assistant, CMPT 361 Introduction to Computer Graphics

Spring 2011

Teaching assistant, CMPT 225 Introduction to Data Structures and Algorithms

Fall 2010

Teaching assistant, CMPT 225 Introduction to Data Structures and Algorithms

Academic positions

April 2018 – present

Universitätsassistent (“post doc”) Visualization and data analysis research group, University of Vienna

January 2015 – April 2018

Universitätsassistent (“prae doc”) Visualization and data analysis research group, University of Vienna

January 2011 – December 2012

Research assistant GrUVi Lab, SFU Computing Science Department

- Developed Tuner, a visualization tool for image segmentation algorithm developers to find optimum parameter settings for their algorithms
- Analyzed the complexity of visualizing high-dimensional continuous functions

September 2005 – May 2006

Research assistant NYU Proteus Project, NYU Computer Science Department

- Implemented a visualization tool for multilingual parse trees in Java
- Outlined basic idea for improved parse tree visualization

May 2002 – October 2002

Research assistant “Learning driving behaviors for autonomous vehicles,” NIST-funded project, Georgetown Computer Science Department

- Added rigid body dynamics to the SimRobot robotics simulator
- Developed a collision detection system based on V-Clip to account for penetration and location of impact

Volunteer positions

September 2010 – September 2012

Steward SFU Teaching Support Staff Union

January 2012 – September 2012

Membership Mobilization Committee Commissioner SFU Teaching Support Staff Union

January 2011 – January 2012

Membership Mobilization Committee member SFU Teaching Support Staff Union

January 2011 – September 2012

Buddy coordinator SFU Computing Science Department

- Coordinated incoming student mentorship program

Academic awards

Spring 2012

SFU graduate fellowship (Masters), CAD 6,250

Professional positions

September 2007 – June 2010

Vice President, Lead Developer StoneCastle Partners. New York, NY

- Implemented an investment management system for a variety of asset types using Pylons/Python, the Dojo javascript framework, and PostgreSQL
- Specified and supervised the integration of the Alfresco document management system with the investment management system to track key investment decisions and deal documents
- Designed a GIS system for monitoring areas of the country risky to banks
- Built a genetic algorithm to find the optimal method to perform field visits across the country
- Used the Condor grid service to implement a CDO evaluation system that enabled a Unix server to call a Windows-only application
- Wrote a simple web crawler to download rural newspaper articles to a central data store so analysts could browse regional news not covered by the major news aggregation sites

July 2004 – September 2007

Vice President, Lead Developer Bear Stearns Asset Management. New York, NY

- Supervised a team of 4 to design and implement a front-office portfolio surveillance system for a structured finance hedge fund using a SQL database using Java and Ruby on Rails
- Used Condor to parallelize various long-running tasks across multiple compute nodes
- Assisted with the design and implementation of a proprietary credit risk model for an internally managed fund
- Interacted directly with business staff to design and implement a variety of portfolio management systems

March 2003 – July 2004

Senior Associate Moody's Investors Service. New York, NY

- Implemented a spread-based Monte Carlo asset simulation in C
- Created a combination Excel spreadsheet and C to create an Excel add-in to rate combo notes
- Assisted analysts with modeling complex waterfall steps in CDO Analytics
- Assisted with the coordination of the CDO Analytics testing team
- "Wrote specifications based on analysts' suggestions and work flow."

Other activities

- Skiing
- Rock climbing
- Trail running
- Cycling
- Scuba diving
- Board games