Thomas Torsney-Weir

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Website: `http://www.tomtorsneyweir.com`

Computer scientist with extensive experience building systems from the ground up as well as research in ML/AI with a focus on visual analysis in multi-dimensional continuous spaces and understanding complex models. I also dabble in functional programming. I love learning about new technologies and how I can use them to create better software more easily. I am particularly a fan of the Haskell and PureScript languages.

Professional positions

October 2023 – present
> **Data Science and Developer Experience Team Lead** Raicoon GmbH. Vienna, Austria

March 2023 – October 2023
> **Python developer** Raicoon GmbH. Vienna, Austria

July 2021 – February 2023
> **Researcher** Biomedical image informatics, VRVis Zentrum für Virtual Reality und Visualisierung Forschungs-GmbH

July 2019 – June 2021
> **Lecturer** Computer science department, Swansea University

April 2018 – June 2019
> **Universitätsassistent ("post doc")** Visualization and data analysis research group, University of Vienna

July 2016 – October 2016
> **Research internship** Center for Applied Scientific Computing, Lawrence Livermore National Laboratory

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

September 2007 – June 2010
> **Vice President, Lead Developer** StoneCastle Partners. New York, NY

September 2005 – May 2006
> **Research assistant** NYU Proteus Project, NYU Computer Science Department

July 2004 – September 2007
> **Vice President, Lead Developer** Bear Stearns Asset Management. New York, NY

March 2003 – July 2004
> **Senior Associate** Moody's Investors Service. New York, NY

May 2002 – October 2002
> **Research assistant** "Learning driving behaviors for autonomous vehicles," NIST-funded project, Georgetown Computer Science Department

Grants

2020
> **Visual Analytics of Epidemic Simulations with Many Actor Behaviours**, £107,010.04.

Journal publications

Rydow, Erik, Rita Borgo, Hui Fang, Thomas Torsney-Weir, Ben Swallow, Thibaud Porphyre, Cagatay Turkay, and Min Chen. "Development and evaluation of two approaches of visual sensitivity analysis to support epidemiological modeling," IEEE Transactions on Visualization and Computer Graphics. 2022.

Dunne, Michael, Hossein Mohammadi, Peter Challenor, Rita Borgo, Thibaud Porphyre, Ian Vernon, Elif E Firat, et al. "Complex model calibration through emulation, a worked example for a stochastic epidemic model," Epidemics. 2022.

Dykes, Jason, Alfie Abdul-Rahman, Daniel Archambault, Benjamin Bach, Rita Borgo, Min Chen, Jessica Enright, et al. "Visualization for Epidemiological Modelling: Challenges, Solutions, Reflections & Recommendations," arXiv:2204.06946 [cs]. 2022.

Schwarzl, Magdalena, Ludovic Autin, Graham Johnson, Thomas Torsney-Weir, and Torsten Möller. "Cellpackexplorer: Interactive model building for volumetric data of complex cells," Computers & Graphics: X. 2019.

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

Gibson, F., R. Fabbro, A. Rahat, Thomas Torsney-Weir, D. Archambault, M. Gravenor, and B. Lucini. "An interactive tool for enhancing hospital capacity predictions using an epidemiological model," Proceedings of the Genetic and Evolutionary Computation Conference Companion. 2021.

Çetin, Asil, Torsten Moeller, and Thomas Torsney-Weir. "CorpSum: Towards an Enabling Tool-Design for Language Researchers to Explore, Analyze and Visualize Corpora," Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems. 2021.

Diehl, Alexandra, Elif E. Firat, Thomas Torsney-Weir, Alfie Abdul-Rahman, Benjamin Bach, Robert Laramee, Renato Pajarola, and Min Chen. *VisGuided: A Community-driven Approach for Education in Visualization* 2021.

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. "Slicing multi-dimensional spaces" 2018.

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.

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

Invited talks

September 8, 2020
>   "Visualization for understanding regression models." Turing Institute, London, UK.

October 30, 2019
>   "Visualizing multi-dimensional spaces." JKU Linz, Austria.

May 03, 2019
>   "Visualization and machine learning." Data science hackathon, Vienna, Austria.

March 18, 2019
>   "Slicing multi-dimensional spaces." Data and Design Meetup, Vienna, Austria.

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.

Scientific activities

2022 – present
Poster chair, VCBM (EG Workshop on Visual Computing for Biology and Medicine)
2020 – present
IPC member, Eurovis papers track
2019 – present
IPC member, EuroVis STAR
2014 – present
Program committee member, International Conference on Intelligent User Interfaces
2012 – present
Reviewer, IEEE Transactions on Visualization and Computer Graphics
2020 – present
Reviewer, Frontiers in Bioinformatics
2019
IPC member, International Symposium on Visual Computing
2016 – 2018
Student volunteer chair IEEE Visualization conference
2018
Program committee member, Workshop on Exploratory Search and Interactive Data Analytics (ES-IDA 2018)
2016 – 2018
Program committee member, International EuroVis workshop on visual analytics (EuroVA)
2012 – 2014
Reviewer, EG/VGTC Conference on visualization (EuroVis)
2014
Reviewer, Computers and Graphics

Teaching

- Relational and Object-Oriented Database Systems
- Data visualization
- Visualization and Visual Data Analysis
- Foundations of Data Analysis
- Introduction to Computer Graphics
- Introduction to Data Structures and Algorithms

Academic awards

2020
Nominated for the Heinz-Zemanek PhD Thesis Award, University of Vienna
2017
A/B publication strategy award, University of Vienna
2012
SFU graduate fellowship (Masters), CAD 6,250

Other activities

- Board games
- Cycling
- Scuba diving
- Skiing
- Trail running
- Hiking
- Home labs
- Dogs