VisGap 2020

The Gap between Visualization Research and Visualization Software

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Table of Contents

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Author Index

Keynote

The Topology ToolKit: Experience, Lessons and Messages

Julien Tierny
CNRS - Sorbonne Université

Abstract

The Topology ToolKit (TTK) is an open-source library for topological data analysis and visualization, which was initially released in 2017. In this talk, Julien Tierny will first give a brief introduction to Topological Data Analysis and will present the main features available in TTK. In the second part of the talk, Julien will review the history of the project, how it emerged and how it evolved and what lessons we can learn as a community to make our research more usable in concrete tools.

Short Biography

Julien Tierny received the Ph.D. degree in Computer Science from the University of Lille in 2008 and the Habilitation degree (HDR) from Sorbonne University in 2016. He is currently a CNRS permanent research scientist, affiliated with Sorbonne University (Paris, France). Prior to his CNRS tenure, he held a Fulbright fellowship (U.S. Department of State) and was a post-doctoral researcher at the Scientific Computing and Imaging Institute at the University of Utah. His research expertise lies in topological methods for data analysis and visualization. He co-authored two books on the topic and received several awards for his research, including best paper awards. He regularly serves as an international program committee member for the top venues in data visualization (IEEE VIS, EuroVis, etc.) and he is an associate editor for IEEE Transactions on Visualization and Computer Graphics. Julien Tierny is also the founder and lead developer of the Topology ToolKit (TTK), an open source library for topological data analysis.

Capstone

Software Sizes and Intent in Academia and Industry, Two Case Studies

Sebastian Grottel
Manager 3D Software Engineering at FARO Scanner Production GmbH

Abstract

When we talk about visualization methods and tools, most times we talk about software. There are many different approaches to software development, e.g., depending on the size of the problem we try to solve or depending on the intent we follow in writing this software. Most interestingly, those concepts, at least from the presenter's point of view, do not really differ at all between academia and industry. What does differ are the intent and the resulting size of the software we write. Using the two biggest projects in his past and present, Sebastian Grottel will present his view on differences in software development approaches in academia and industry, why this actually is not a problem at all, and what we could try to do to close the VisGap, i.e. the difficulty in transitioning a visualization research software into an industry software product.

Short Biography

Sebastian Grottel worked as researcher at the Institute of Visualization and Interactive Systems, and the Visualization Research Center of the University of Stuttgart. He received his PhD on Point-based Visualization of Molecular Dynamics Data Sets. He worked as post-doctoral researcher at the Chair for Computer Graphics and Visualization at the Technical University of Dresden. His research focus was in interactive scientific visualization of large particle-based data sets and multi-dimensional data. Sebastian joined FARO Scanner Production GmbH as senior software developer, working on software for very large point-cloud data sets, resulting from many terrestrial LIDAR scans. He is now manager in Research and Development, and coordinates development of two large software packages for data processing and interactive visualization.