

VisGap 2022

The Gap between Visualization Research and Visualization Software

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Keynote

“It works on *my* machine” — Transporting the open-source universe from a research lab into planetariums

Alexander Bock

Assistant Professor, Linköping University, Sweden

Abstract

OpenSpace is an open-source platform designed to visualize the entire known universe. It is designed to be an environment for visualization research, a research tool for astronomers and astrophysicists, and an ecosystem for the public dissemination of human knowledge of space at the same time. Usage of the same software in these three areas enables the rapid deployment of research results to the general public without the need of format conversions when transitioning from a “research software” to a “presentation software” or additional learning curves when learning new softwares for just a presentation. It thus enables a short-circuiting of the knowledge dissemination pipeline by lowering the barrier for domain experts to present their findings to the public instantly. This talk describes the origins of *OpenSpace* as a PhD thesis project and how it grew into a widely used tool for homes and planetarium shows, present some of the software features, explains some of the design considerations, and elaborate on lessons learned when scaling up research software for use in the general public and dealing with the onslaught of bugs that come with it.

Short Biography

Alexander Bock is an Assistant Professor at Linköping University, Sweden. Prior to this, he has been Moore-Sloan Data Science Fellow with the Center for Data Science at New York University and a Research Fellow with the Scientific Computing and Imaging Institute at the University of Utah. He received his PhD in Visualization and Interaction from Linköping University, Sweden. In 2015, he was a visiting Research Scholar with the Community Coordinated Modeling Center at NASA’s Goddard Space Flight Center, USA. He is also the Development Lead on the open-source Astrovisualization software *OpenSpace*, developed in collaboration between Linköping University, the American Museum of Natural History, NASA, New York University, and the University of Utah. Bock was awarded 2014 and 2015 with the Best Scientific Visualization poster and 2017 with the Best Scientific Visualization paper awards at the IEEE Visualization conference for his work in the field of Astrovisualization.

Keynote

From Research to Tech Translation: Lessons from the Trenches

Melanie Tory

Director of Data Visualization Research, Northeastern University The Roux Institute

Abstract

As visualization researchers, most of us would like to see the results of our research integrated into tools and adopted in practice. Unfortunately, there's no silver bullet to bridge the gap between visualization research and visualization software, but there are strategies we can take as researchers to increase the likelihood of success. Since 2015 I've held various roles in industry-oriented research, mostly at Tableau Software. Over that time, I learned a number of lessons (usually the hard way) about what works in interfacing with software development teams and translating scientific results into practice. In this talk, I'll share some of those lessons learned and invite a discussion about how visualization research practices might adapt to encourage tech translation.

Short Biography

Melanie Tory is Director of Data Visualization Research at the Roux Institute, Northeastern University. Her team focuses on empowering people to do more with data, through the design and evaluation of novel visualization techniques, human-data interactions, and technology interfaces. She is especially focused on visualizations for health and engineering applications, and the interplay between visualization and AI, in alignment with other priority research areas at the Roux. In her previous role at Tableau, Melanie managed an applied user research team and conducted research in natural language interaction with visualizations, ultimately commercialized as Tableau's Ask Data feature. She also worked as a faculty member in visualization at the University of Victoria, where she explored topics such as collaborative and personal visual analytics. Melanie earned her PhD in Computer Science from Simon Fraser University and her BSc from the University of British Columbia. She is Associate Editor of IEEE Computer Graphics and Applications, IEEE Transactions on Visualization & Computer Graphics, and Computer Graphics Forum, and has served as Papers Co-chair for the IEEE Information Visualization and ACM Interactive Surfaces and Spaces conferences.