

**EuroVis 2024**  
**26th Eurographics Conference on Visualization 2024**

Odense, Denmark  
May 27 – 31, 2024

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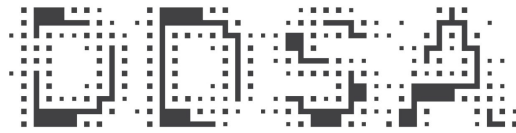
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## Preface

EuroVis 2024, the Eurographics Conference on Visualization was held in Odense, Denmark from May 27 to May 31, 2024. Following EuroVis 2023 in Leipzig, this was the third time since the Covid Pandemic that the international data visualization community could come together at the conference in-person with the conference returning to normal.

EuroVis has been an annual event since its inception in 1990. Over the years, the venue has changed names. It was originally started as the Eurographics Workshop on Visualization in Scientific Computing, and was called VisSym between 1999 and 2005. Since 2005, the conference has been called the Eurographics / IEEE VGTC Conference on Visualization, or EuroVis for short. This change of name is fitting: the conference broadly covers the field of data visualization. Topics include visualization techniques for spatial data, such as volumetric, tensor, and vector field datasets, and for non-spatial data, such as graphs, text, and high-dimensional datasets. EuroVis also covers the theory of visualization, hardware acceleration, large datasets, perception, interaction, user studies, information visualization, visual analytics, and many application areas of visualization. EuroVis is a global event. While it has always been held in Europe, the community comes from around the globe. This year, the Full Papers International Program Committee consisted of 88 members representing the global visualization research community, from North America, South America, South Asia, East Asia, Africa, and Europe. The papers are similarly from around the world.

As in previous years, the EuroVis proceedings are again published under a Gold Open Access model that makes the papers available to everyone. The full-papers proceedings for EuroVis are published as a special issue of the Computer Graphics Forum journal. 168 abstracts were submitted, followed by 134 full paper submissions, of which all entered the full review process. The number of submissions remained the same as 2023.

Authors were given the option of anonymous submission, although International Program Committee members have always been able to see the author identities in the submission system. The conference review process this year used again a structured review form, but there was no rebuttal phase. During the first review cycle, each paper received between four and five reviews, two from members of the International Program Committee (IPC) and two or three reviews from external reviewers selected by the IPC members. The four to five reviewers held an online discussion. The reviewers for each paper then recommended conditional acceptance or rejection to the Full Papers Program Chairs. Based on the recommendations and responses, the Paper Chairs selected one of three outcomes for each paper: conditional acceptance, a recommendation for fast-track consideration in Computer Graphics Forum, or rejection. 36 papers were conditionally accepted in the first round. These were then revised by the authors and subject to a second round of review. After the second round of review, 35 papers were accepted, yielding an acceptance rate of 27%. Six papers were invited to the fast-track process to undergo revision for consideration in a future issue of Computer Graphics Forum.

The accepted papers form a set of 12 exciting sessions in the full paper program (including the awards papers session) on current topics in Visualization. In cooperation with IEEE Transactions on Visualization and Computer Graphics (EiC Han-Wei Shen, AEiC Ross Maciejewski), and with Computer Graphics Forum (EiCs Michael Wimmer and Pierre Alliez), the Papers Co-Chairs invited recently published journal papers which have not yet been presented at conferences. With that, a set of exciting papers from these journal venues complements the full paper sessions. We are also glad that in cooperation with IEEE Computer Graphics and Applications (EiC: André Stork), two further sessions could be formed to present current papers which again, have not yet been presented at conferences. We thank everyone involved in the invitation process, and especially all authors who were able to accept the invitations, for enriching the EuroVis 2024 program.

The EuroVis conference recognizes the best papers submitted to the conference through Best Paper Awards. This year, the Full Paper Chairs nominated four manuscripts based on reviews, the review scores, the reviewer discussion, and recommendations from the IPC and external reviewers. Then, a Best Paper Committee formed by Tobias

Schreck, Kai Lawonn, and Helen C Purchase made the final selection of a Best Paper and two equal Honorable Mentions.

The Best Paper Award this year goes to “HORA 3D: Personalized Flood Risk Visualization as an Interactive Web Service.” by Silvana Rauer-Zechmeister et al. The Best Paper Committee stated: "This paper demonstrates a robust and comprehensive methodology for using visualisation for real world impact, addressing a crucial social problem. The panel was particularly impressed with the evaluation and deployment of the system. This is an excellent example of an Application paper as defined by Vis: formulating "best practice in working with domain experts to transform general-purpose visualization technology to domain-specific solutions."

One equal Honorable Mention is awarded to “Guided by AI: Navigating Trust, Bias, and Data Exploration in AI-Guided Visual Analytics.” by Sunwoo Ha et al. The Best Paper Committee stated: “This paper addresses a timely and important issue relating to the human use of AI tools. The panel was particularly impressed with the use of novel experimental procedures to investigate human behaviour issues that have not been explored in depth before. The validity of the experiment was enhanced by the use of a previous VAST challenge data set and the associated visual analytics application.”

Another equal Honorable Mention is awarded to “Exploring Classifiers with Differentiable Decision Boundary Maps” by Alister Machado dos Reis et al. We cite again the Best Paper Committee: “In this paper, the authors provide very carefully designed extensions to existing techniques that help analysts understand the behaviour of classifiers. This is timely work that builds on the extensive previous work on machine learning and the explainability of machine learning methods, thus enabling increased trust in the models. The panel was particularly impressed with the rigor and quality of the research.”

In recognition of the importance of the review process, this year the Full Paper Chairs again recognized the best EuroVis full paper reviewers, through a Best Reviewer Award. The Full Paper Chairs analyzed all the reviews submitted to the Full Papers program (4-5 reviews per submission, 134 submissions entered in the review process) as well as the reviewer discussion for each submission. They then compiled a list of outstanding reviewers, using as criteria the quality of submitted reviews, and the reviewer participation into paper discussions. The Chairs also considered nominations entered by the reviewer pool. Each Chair did not nominate any of their conflicts of interest. After discussion, the Chairs selected by consensus a subset of six reviewers, then anonymized their corresponding review samples. A Best Reviewer Committee formed by Alvitta Ottely, Marc Streit, and Kwan-Liu Ma reviewed the anonymized samples, discussed the nominations, and selected a Best Reviewer award.

The Best Reviewer award went to Jo Wood. The committee stated: “Jo’s reviews exemplify the ideal qualities of an excellent review. They strike an admirable balance between encouragement and constructive criticism. The level of detail in the reviews is impressive and includes concrete recommendations for improvements. This personalized approach to reviewing can go a long way in supporting and nurturing the growth of early-career researchers, who will benefit from such guidance and mentorship of experienced scholars.”

Two equal honourable mentions were provided by the committee. One went to Tobias Isenberg: “Tobias invested substantial effort in meticulously reviewing each paper. This thorough approach ensured that authors received valuable guidance to improve the quality and clarity of their work. Tobias’s thoughtful feedback reflects a dedication to upholding high standards of academic scholarship.” while another went to Marco Angelini: “Marco’s reviews stand out for their remarkable attention to detail and suggest a profound understanding of the paper. They provided well-reasoned justifications for their feedback and provided authors with insightful and valuable input to enhance the quality of the work.”

We would like to thank everyone who has made the event possible. We thank the authors of all submissions for providing us with such a broad range of exciting work to select from. We thank the International Program Committee for their work in identifying external reviewers and guiding the review process. We thank the reviewers for their

work in selecting the papers and providing feedback to authors. We thank the chairs of the other conference tracks for their help in making EuroVis 2024 such a successful event: Short Paper chairs Christian Tominski, Manuela Waldner, Bei Wang; the STAR chairs Andreas Kerren Renata Raidou, Christoph Garth; the poster chairs Kostiantyn Kucher, Alexandra Diehl, Christina Gillmann; the Panels and Tutorials Chairs Hans-Jörg Schultz, Tobias Isenberg, the Workshop Chairs Jürgen Bernhard, Alfie Abdul-Rahman, and all the chairs of the co-located workshops; the Student Volunteers Chair Jakob Kusnick, and the Education Chairs Elif E Firat, Robert S Laramée, Nicklas Sindelv Andersen. We especially thank Publication Chair Stefanie Behnke for her great work in preparing the publications, and James Stewart for his swift assistance with the review software system. We also thank the EuroVis Steering Committee for giving the Paper Chairs their full support and help: Barbora Kozlikova, Pere-Pau Vázquez, Silvia Miksch, Tatiana von Landesberger, Heike Leitte, Rita Borgo, and James P. Ahrens.

We also thank very much the General Chair Stefan Jänicke for working on the program; the vice chairs: Johanna Schmidt, Christian Heine, Isaac Cho; and the conference management team: Lisa Eckford-Soper, Eleni Bakou, Ursula Lundgreen, Michael Steensen, and Philip Hallenborg; and the local scientific team: Gareth Walsh, Esben Andreas Wrona Bay Sørensen, Camilla Vang Østergaard, Rula Mreish. Their efforts were invaluable in creating the full conference, a highly successful event for researchers, authors, students, all interested and the community at large.

Technical conferences, such as EuroVis, serve an important role in bringing the research community together to share ideas. We value the opportunity to share ideas and collegiality. We hope that you enjoy the conference and are inspired by our exciting programme of scientific papers.

Eurographics Conference on Visualization (EuroVis) 2024  
Roxana Bujak, Daniel Archambault, Wolfgang Aigner  
Paper Co-Chairs and Guest Editors

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## Keynote Talk

### **Blending Minds: How Multidisciplinary Approaches Are Reshaping Data Visualization**



*Alvitia Ottley*  
Washington University, St. Louis

#### **Abstract**

This keynote explores how integrating methodologies from diverse fields like Psychology, Economics, Statistics, and Artificial Intelligence enriches data visualization research, evaluation, and practice. Each field brings unique perspectives that enhance presentation clarity and effectiveness: Psychology offers principles for perceptual accuracy and cognitive load management, Economics provides insights into decision-making visualizations, Statistics upholds rigorous integrity of visual representations, and Artificial Intelligence introduces automation, predictive analytics, and interactive exploration tools. We examine practical examples and emerging trends illustrating how cross-disciplinary knowledge leads to more effective visualizations. Attendees will gain a comprehensive understanding of how the intersection of these disciplines pushes the boundaries of data visualization's impact across different sectors.

#### **Short Biography**

Dr. Alvitia Ottley is an Associate Professor in the Computer Science & Engineering Department at Washington University in St. Louis, Missouri, USA. She also holds a courtesy appointment in the Psychological and Brain Sciences Department. Her research uses interdisciplinary approaches to solve problems such as how best to display information for effective decision-making and how to design human-in-the-loop visual analytics interfaces that are more attuned to how people think. Dr. Ottley received an NSF CRII Award in 2018 for using visualization to support medical decision-making, the NSF Career Award for creating context-aware visual analytics systems, and the 2022 EuroVis Early Career Award. In addition, her work has appeared in leading conferences and journals such as CHI, VIS, and TVCG, achieving the best paper and honorable mention awards.

## Campfire Talk

### Visualizing Research from the Humanities Building: Reflections on Empathy and Mutual Benefit



*David Joseph Wrisley*  
NYU Abu Dhabi

#### Abstract

As researchers in the humanities and cultural heritage have become increasingly comfortable with the creation and management of research data, they have become increasingly proficient in the visual communication of research results. These visual outputs can still garner mixed reactions in their research communities, however, for bending data to work with out-of-the-box tools or for foreclosing on complexity rather than showcasing it. Participatory design, at its best, opens new spaces for creative collaboration across the disciplines, but it also reveals some of the deeper value systems implicit in research communities. In this talk, I argue that indeed visualization can serve as a vehicle for seeing the humanities in a different light, and that the opposite can be equally true, but also that it is important for both our praxis and our product, to embed empathy in the transdisciplinary encounter, finding a compromise for the values that each of our communities holds dear.

#### Short Biography

David Joseph Wrisley is Professor of Digital Humanities at NYU Abu Dhabi. His current research interests include comparative literary studies (European languages and Arabic), handwritten text recognition across writing systems as well as computer vision applications in the humanities. He has been living and working in Arab countries since 2002 and is the co-founder of two digital humanities training institutes in Beirut (2015) and Abu Dhabi (2020).

## Capstone Talk

### Photographic storytelling on saying YES to integrate with those we shun



*Jacob Holdt*

#### Abstract

Jacob Holdt will present a poignant exploration of social issues through his photography. Capturing the lives of those on the margins of society, he challenges viewers to confront difficult truths while developing compassion. Jacob will share insights into his relationships with his subjects and the ethical considerations of his work. This presentation goes beyond photography; it is a call to look at the world with compassion and understand the role of art in social change. Jacob's presentation will not focus on visualization, but he will show us how photographic storytelling can be used to embrace diversity and mutual understanding. EuroVis attendees will leave the event with a deeper appreciation of our shared humanity, which is reflected in Jacob's work.

#### Short Biography

Jacob Holdt is a Danish photographer, writer and lecturer. His mammoth work "American Pictures" gained international fame in 1977 for its photographic revelations of the hardships of the American underclass. In 2009, he received the Fogtdal Photographers Award for his effective use of photography to shape public opinion. The Danish Art Foundation awarded him a lifelong grant, given to artists who create and have created art of the highest quality and to the delight of many. In particular, Jacob Holdt reaches "large audiences, opening their eyes to the depths of reality without sacrificing artistic integrity and aesthetic freedom." His lifelong experience of over 7,000 lectures on social issues such as racism, oppression or prejudice in American Pictures, his reflections and recurring visits to the people he has photographed and engaged with have shaped a series of warm, inclusive and integrating messages that Jacob Holdt conveys in his lectures.