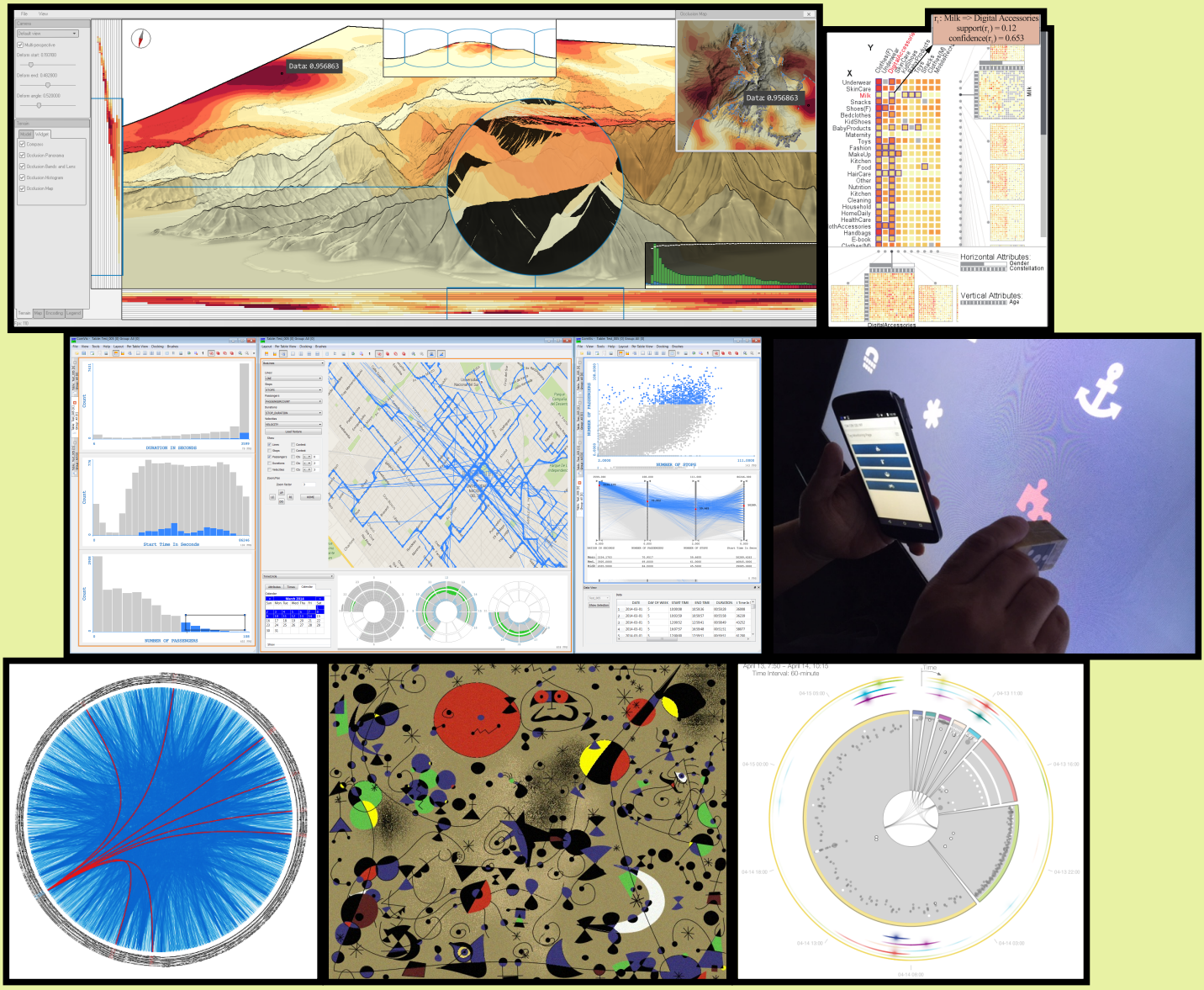
VINCI 2016

The 9th International Symposium on Visual Information Communication and Interaction

Dallas, Texas, USA
September 24-26, 2016



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VINCI '16

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General Chair: Kang Zhang

Program Chair: Andreas Kerren

Sponsors: The University of Texas at Dallas
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Preface

Welcome to the **9th International Symposium on Visual Information Communication and Interaction (VINCI 2016)** held in Dallas, TX, USA from September 24th to 26th, 2016. The objective of this symposium series is to provide a forum for researchers, artists, designers, and industrial practitioners to discuss the state of the art in visual communication theories, designs, and applications. As in past years, the papers in these proceedings represent the most interesting and exciting recent research in the area of visual communication.

The conference this year received 52 submissions in total (i.e., 42 full paper, 6 short paper and 4 poster submissions) from the international research community, each of which was carefully reviewed by at least three Program Committee members. Based on these reviews, we accepted 14 full papers finally (33.3% acceptance rate). In addition, because of the high quality of submissions, we selected 5 from the full/short paper submissions to be presented as short papers. We also accepted 9 submissions as posters from the poster and remaining paper submissions. The 14 full papers, 5 short papers and 9 posters presented here cover a broad range of visual communication topics, ranging from visualization, to designs, theories and applications. The conference program also includes a panel organized by Vetria L. Byrd (Purdue University) and Joseph A. Cottam (CREST/Indiana University) dedicated to visualization capacity building.

Moreover, we are proud to have two fascinating plenary keynote talks included into the program, given by internationally distinguished researchers: Roger Malina (The University of Texas at Dallas, USA) and Georges Grinstein (University of Massachusetts Lowell, USA). They contribute with their expertise and experience to provide a deeper understanding of the conference scope and topics.

We thank the authors of all submissions, whose work and dedication made it possible to put together an exciting program of high technical quality. Next, we would also like to express our deep appreciation to the members of the International Program Committee (including our auxiliary reviewers) for the work they have put into carefully reading, evaluating, and writing insightful reviews of the submitted papers and posters. We are also grateful to all organizing committee members: the symposium and these proceedings would not have been possible without their assistance. Finally, we thank the invited speakers for their invaluable contribution and sharing their vision in their keynote talks.

Kang Zhang
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Andreas Kerren
Program Chair

September 2016

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Keynote Speakers

Roger Malina

Title: Beyond the Two Cultures: A Crisis in Representation

Abstract

As an astrophysicist, I have spent my career bathing in astronomical data, the data world is as real to me as the sensory physical world. Yet we are still in the stone age of representing digital data in forms that we can understand and feel. Three years ago I started the UT Dallas ArtSciLab where artists and scientists work side by side making trouble with data. I will present our work with neuroscientists, astronomers and geoscientists and also talk about the new born digital hybrids whose existence gives the lie to the very concept of C P Snow's Two Cultures.

Biography

Malina is a space scientist and astronomer, an art-science researcher, Arts and Technology Distinguished Chair Professor, and Professor of Physics, at UT Dallas. He obtained his B.S. in physics from MIT in 1972, and his Ph.D. in astronomy from the University of California, Berkeley, in 1979. Founded the ArtSciLab which hosts projects which involve collaboration between artists and scientists, resulting in art works, scientific data exploration tools, and public engagement activities involving the integration of the arts, design and humanities in science, technology, education and mathematics (STEAM). Malina is an elected member of the International Academy of Astronautics. "Laser d'or" Prize, from the International Video Art Organization.

Georges Grinstein

Title: Visual Analytics and the VAST Challenges: this year's Challenge and a retrospective look at an influential international competition

Abstract

The VAST Challenges are a decade old and have had large international participation. The challenge data sets are mostly synthetic with embedded ground truth and participants are asked stop solve a particular problem, which in many cases involves discovering that ground truth, which in turns makes it easier to objectively evaluate submissions. But submissions are also evaluated several other ways. I will discuss several key problems in Visual Analytics, provide examples of how the VAST Challenges were developed as an attack on

these problems, and show award winning solutions. I will also discuss the importance of open source tools in solving these problems.

Biography

Georges Grinstein is Professor of Computer Science at the University of Massachusetts Lowell, was head of its Bioinformatics Program, Director of its Institute for Visualization and Perception Research, and is now Chief Scientific Officer of Weave Visual Analytics. He received his Ph.D. in Mathematics from the University of Rochester in 1978.

His work is broad and interdisciplinary, covering the perceptual and cognitive foundations of visualization, very high-dimensional data visualization, visual analytics and applications. The emphasis is on the modeling, visualization, and analysis of complex information data and systems.

He has over 40 years in academia with extensive consulting, over 300 research grants, products in use nationally and internationally, several patents, numerous publications in journals and conferences, a book on interactive data visualization, founded several companies, been the organizer or chair of national and international conferences and workshops in Computer Graphics, in Visualization, and in Data Mining. He has given numerous keynotes and mentored over 40 doctoral students and hundreds of graduate students. He has been on the editorial boards of several journals in Computer Graphics and Data Mining, a member of ANSI and ISO, a NATO Expert, and a technology consultant for various government agencies and commercial organizations.

For the last ten years he has co-chaired the IEEE VAST Challenges in visual analytics leading to new research areas. He has developed and taught new courses, one of which Radical Design focused on how to develop radical new products instead of evolutionary ones. He is a member of the Department of Homeland Security's Center of Excellence CCICADA (Command, Control and Interoperability Center for Advanced Data Analysis), and directs the development of Weave, an open source web-based interactive collaborative visual analytics system incorporating numerous innovations.

Cover Image Credits

IDSPlanet: A Novel Radial Visualization of Intrusion Detection Alerts 25
Yang Shi, Yaoxue Zhang, Fangfang Zhou, Ying Zhao, Guojun Wang, Ronghua Shi and Xing Liang

Bus Lines Explorer: Interactive Exploration of Public Transportation Data 30
Rainer Splechtna, Alexandra Diehl, Mai El-Shehaly, Claudio Delrieux, Denis Gracanin and Kresimir Matkovic

Visibility Widgets: Managing Occlusion of Quantitative Data in 3D Terrain Visualization 51
Martin Röhlig and Heidrun Schumann

A Comparative Study on Inter-Device Interaction: One-Handed Interaction VS Two-Handed Interaction 67
Zheng Huang, Jed Limke and Jun Kong

Visual Analysis of User-Driven Association Rule Mining 96
Hui Lei, Cong Xie, Pingping Shang, Fan Zhang, Wei Chen and Qunsheng Peng

Generation of Miro's Surrealism 130
Lu Xiong and Kang Zhang

Visual Analysis of TED Talk Topic Trends 150
Sarah Hong, Yuyi Liu and Zhao Xiao

Table of Contents

Visualization Applications

The Dynamic Call Graph Matrix 1
Michael Burch

BranchingSets: Interactively Visualizing Categories on Node-Link Diagrams 9
Francesco Paduano, Ronak Etemadpour and Angus Forbes

A Guided Tour of Literature Review: Facilitating Academic Paper Reading with Narrative Visualization 17
Yun Wang, Dongyu Liu, Huamin Qu, Qiong Luo and Xiaojuan Ma

IDSPlanet: A Novel Radial Visualization of Intrusion Detection Alerts [SP*] 25
Yang Shi, Yaoxue Zhang, Fangfang Zhou, Ying Zhao, Guojun Wang, Ronghua Shi and Xing Liang

Bus Lines Explorer: Interactive Exploration of Public Transportation Data [SP] 30
Rainer Splechtna, Alexandra Diehl, Mai El-Shehaly, Claudio Delrieux, Denis Gracanin and Kresimir Matkovic

Visualization Methodologies

Enhancing Infographics Based on Symmetry Saliency 35
Kouhei Yasuda, Shigeo Takahashi and Hsiang-Yun Wu

Deep Exploration of Multidimensional Data with Linkable Scatterplots 43
Quang Vinh Nguyen, Simeon Simoff, Yu Qian and Maolin Huang

Visibility Widgets: Managing Occlusion of Quantitative Data in 3D Terrain Visualization 51
Martin Röhlig and Heidrun Schumann

Eliciting Tacit Expertise in 3D Volume Segmentation 59
Ruth West, Meghan Kajihara, Max Parola, Kathryn Hays, Luke Hillard, Anne Carlew, Jeremy Deutsch, Brandon Lane, Michelle Holloway, Brendan John, Anahita Sanandaji and Cindy Grimm

Evaluation and Cognition

A Comparative Study on Inter-Device Interaction: One-Handed Interaction VS Two-Handed Interaction 67
Zheng Huang, Jed Limke and Jun Kong

What Makes You Think This Is a Map? Suggestions for Creating Map-like Visualisations 75
Patrick Cheong-Iao Pang, Robert P. Biuk-Aghai and Muye Yang

*SP: Short Paper

How People Deploy Dimensional Information to Estimate Relative Values 83
Yi-Na Li and Dong-Jin Li

Do Defaults Matter? Evaluating the Effect of Defaults on User Preference for Multi-Class Scatterplots [SP] 91
Casey Haber, Lyndon Ong Yiu, Alark Joshi and Sophie Engle

Visual Analytics

Visual Analysis of User-Driven Association Rule Mining 96
Hui Lei, Cong Xie, Pingping Shang, Fan Zhang, Wei Chen and Qunsheng Peng

Supporting Collaborative Political Decision Making – An Interactive Policy Process Visualization System 104
Tobias Ruppert, Andreas Bannach, Jürgen Bernard, Hendrik Lücke-Tieke, Alex Ulmer and Jörn Kohlhammer

Spatiotemporal Analytics of Topic Trajectory [SP] 112
Jiangen He and Chaomei Chen

A Hybrid Approach for Event Social Influence Visualization [SP] 117
Wenqian Ji, Yan Tang, Pengju Ma, Shijie Tang, Zhipeng Fang, Xuan Li and Tianjian Chen

Computational Aesthetics

Adaptively Tiled Image Mosaics Utilizing Measures of Color and Region Entropy 122
Lina Zhang, Kwan-Liu Ma and Jinhui Yu

Generation of Miro's Surrealism 130
Lu Xiong and Kang Zhang

Posters

EduVis: Visualization for Education Knowledge Graph Based on Web Data 138
Kai Sun, Yuhua Liu, Zongchao Guo and Changbo Wang

Visualizing Time-Variant Sets on a Handheld Device 140
Iliesa S. K. Delai, Meilan Jin and Geoffrey M. Draper

Interactive Exploration of Multidimensional YouTube Data Using the GPLOM Technique 142
Seimei Matsusaki, Xi Han, Alark Joshi and Sophie Engle

The Effect of Color on Short-term Memory in Information Visualization 144
Xin Kang

Design for the Future: Incorporating Cradle to Cradle Design into our Street 146
Yinan Li and Jian Wang

VolSelectAware: Visual-Cognition Coupled Non-Visual Data-Driven Volume Selection for Immersive Scientific Visualizations 148
Daniel Wilches and Amy Banic

Visual Analysis of TED Talk Topic Trends 150
Sarah Hong, Yuyi Liu and Zhao Xiao

A Mapping of Color Information from Inputted Images to Generated Polygons: A Case Study of Generative Design of Epoxy-Terrazzo Artistry 152
Jie Wu and Guangxi Chen

Visual Communication Power Construction and Multimodal Discourse Analysis of Tobacco Control Advertising 154
Qian Wang and Bing Xiao

Panel

Facilitating Visualization Capacity Building 156
Vetria L. Byrd and Joseph A. Cottam

Author Index 157