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Proceedings

Edited by

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Challenge Supporter



Preface

Message from the Conference and Paper Chairs

The success of the IEEE VAST Conference continues to grow. Each year brings more new researchers to the field and produces important new advances in the theory and practice of visual analytics. Now in its fifth year, and its first year as an IEEE Conference, VAST received an exceptional number of submissions. Ninety-four papers were submitted (up from 69 in 2009), of which the symposium was able to accept 26. This astounding growth has prompted discussion about expanding the VAST program in future years to allow more papers to be presented.

The conference program reflects the breadth of research in the visual analytics community. Paper sessions cover such areas as spatio-temporal and multivariate analysis, text analysis, support for sensemaking, and collaborative analysis and the analytic process. To select this year's program, an international program committee of 34 experts carefully considered the papers. Each paper was assigned to a primary and a secondary reviewer from this committee. The primary reviewer had to assign two or more tertiary reviewers to each paper so that at least four reviews were provided for all papers. Based on these reviews, the paper co-chairs selected the accepted papers and organized the program sessions. We are grateful to the International Program Committee and the reviewers for their contributions to a successful review process.

The Best Paper for 2010 was chosen by an Award Selection committee composed of five members who reviewed the top papers and their peer reviews. We congratulate Daniela Oelke, David Spretke, Andreas Stoffel, and Daniel Keim for the selection of their paper, "Visual Readability Analysis: How to Make Your Writings Easier to Read," as this year's best paper. The paper develops a set of readability features for text documents and introduces a visual tool for analyzing readability, with the goal of helping users improve the readability of their work. The committee also selected two honorable mentions, noted in the table of contents.

The VAST Challenge continued to showcase the application of visual analytics tools and methods to realistic problems. The 2010 Challenge centered on a threat scenario concerning illegal arms dealing and a worldwide pandemic. This year brought a new domain, bioinformatics, and larger-scale datasets (such as the million-record-plus epidemic data set). The Challenge used the successful format of mini-challenges that each deal with unique data types and elements of the scenario, and a grand challenge that ties the story together. Teams could choose to tackle one or more mini-challenges, or attempt the grand challenge that connects all three. The three mini-challenges involved text analysis of synthetic intelligence reports concerning arms transactions in 13 counties, anal-

ysis of hospitalization and death records for the dreaded and deadly "Drafa Fever," and analysis of genetic fingerprints that would point to the person and place of origin of the disease. In 2010, 57 submissions were received, an increase of nine over 2009; five of these entrants took on the grand challenge. Submissions came from 13 countries. The Challenge continued to help test the current state of visual analytics systems and prompt technology development in new areas. As of this writing, the 2010 challenge data has been downloaded by over 425 unique registrants. The 2010 data, together with previous Challenge data sets, will continue to be available as a valuable resource for the visual analytics community. The VAST Challenge is the product of significant time and effort by the co-chairs—Georges Grinstein, Catherine Plaisant, Jean Scholtz, and Mark Whiting—and their teams, including the members of the Threat Stream Generator project of the National Visualization and Analytics Center that contributed the data. We congratulate the organizers and participants for an exciting VAST Challenge 2010.

The VAST poster program continues to serve a vital role as a venue for new work and for material not yet mature enough to warrant a full paper. Twenty-seven poster submissions were received, of which 21 were accepted. We were pleased to be able to accept seven additional posters over last year. In addition to presentation during the VAST poster session, the two-page extended abstracts that accompany each poster are published in the proceedings. The VAST posters co-chairs, Chris Shaw and Jonathan Roberts, did an exceptional job of organizing the peer review process, in which each poster was assigned to at least two reviewers.

Finally, while 2010 contained significant growth and maturation of the visual analytics community, we were saddened to lose a leader. Jim Thomas was instrumental to the progress of visualization for more than three decades and, more recently, to the foundation of VAST. His impact will carry forward for years to come in the pages of the VAST proceedings.

Brian Fisher and William Pike
VAST 2010 Conference Chairs

Alan MacEachren and Silvia Miksch
VAST 2010 Paper Chairs

<http://tab.computer.org/vgtc>

MISSION

The IEEE Visualization and Graphics Technical Committee (VGTC) is a formal subcommittee of the Technical Activities Board (TAB) of the IEEE Computer Society. The VGTC provides technical leadership and organizes technical activities in the areas of visualization, computer graphics, virtual and augmented reality, and interaction.

The VGTC sponsors not only the annual VisWeek and Virtual Reality conferences, but also many focused symposia and conferences including EuroVis, 3D User Interfaces, VAST, ISMAR, Volume Graphics, PacificVis, and Haptics.

AWARDS

To recognize its members for their outstanding technical accomplishments, the VGTC established a series of technical awards in 2005. The awards honor outstanding technical achievements in visualization and virtual reality. The VGTC awards chair for visualization is Bill Lorensen, and the awards chair for virtual reality is Larry Hodges.

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The VGTC is actively involved in national initiatives that study and promote the immediate and long-range challenges in visualization and computer graphics and related research areas. For more information visit our web page at <http://vgtc.org>.

GETTING INVOLVED

Membership in the VGTC is open to all individuals interested in visualization, virtual reality and computer graphics at a professional level. There are no dues for VGTC membership and no IEEE membership requirements.

WEB SITE

Visit the VGTC web site at <http://vgtc.org>. It offers information about how to join, VGTC activities, awards, national initiatives, conferences and symposia, and contains a link to a comprehensive membership directory.

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Georg Fuchs	David Mountain	May Yuan
Jinzhu Gao	Klaus Mueller	Xiaoru Yuan
Carsten Goerg	Thomas Müller	Jian Zhang
Tera Marie Green	Tamara Munzner	Xiaolong (Luke) Zhang
Theresia Gschwandtner	Syavash Nobarany	Yulei Zhang
Frank Hardisty	Sonja Oetl	Jianping Zhou
Mountaz Hascoet	Panagiotis Papapetrou	Caroline Ziemkiewicz
Helwig Hauser	Don Pellegrino	David Zimbra
Jeffrey Heer	Adam Perer	Raul Zurita-Milla
Nathalie Henry Riche	Emmanuel Pietriga	
Christian Hirsch	A. Johannes Pretorius	
Danny Holten	Ross Purves	
Jian Huang	Alessandra Raffaeta	
Otto Huisman	Chiara Renso	
Shah Rukh Humayoun	Alexander Rind	
Petra Isenberg	Christian Rohrdantz	
Mikkel Rønne Jakobsen	Stuart Rose	
Yun Jang	Delia Rusu	
TJ Jankun-Kelly	Georg Sander	
Dong Hyun Jeong	Gerik Scheuermann	
Sara Johansson	Tobias Schreck	
Ilir Jusufi	Lei Shi	