A Personal Perspective on Visualization and Visual Analytics

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Abstract
Data surrounds each and every one of us in our daily lives, ranging from logs of exercise and diet, to information about our home energy use, to archives of our interactions with others on social media, to online resources pertaining to our hobbies and interests. There is enormous potential for us use this data to gain insight and knowledge about ourselves and our communities. However, designing and applying visualization and visual analytics in our personal lives brings a unique set of design challenges. If these tools belong in our personal lives, work type criteria such as efficiency may no longer apply. In this workshop we will identify and explore research directions and design criteria for personal visualization and personal visual analytics. Our goal is to call research attention to these areas, to engage the design community in this timely and growing field, and to establish a community and common vision for researchers and practitioners working in this space.

Author Keywords
Visualization; visual analytics; personal.

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms

Design.

Introduction

For each and every one of us as individuals, "big data" impinges on our personal lives as well as our professional lives. Increasingly, we are going out of our way to collect data about ourselves (e.g. [1], [2], [3]): for example, people collect information to track their eating, exercise, or sleep habits, to monitor and determine causes of conditions such as chronic pain or anxiety. The rapid growth of the Quantified Self [4] movement, where people design tools to collect and understand their personal data, is a testament to the increasing desire we have for this self-knowledge.

Application of Visualization and Visual Analytics research to our personal context offers substantial opportunity to help individuals gain insight and knowledge about themselves and their communities, ranging from health and fitness information, to music listening histories, to records of their interactions with others through social media. Monitoring and analyzing personally relevant data can help us better understand aspects of our own lives and make improved choices [1]. However, designing tools to support the analysis of data in one's non-professional life brings a unique set of research and design challenges.

Personal Visualization (PV) involves the design of interactive visual data representations for use in a personal context. *Personal Visual Analytics (PVA)* is the science of analytical reasoning facilitated by visual representations used within a personal context. Personal context implies a non-professional situation, where people may have different goals, priorities, role expectations, environments, or time and resource budgets than in professional aspects of their lives. PV & PVA aim to empower individuals in their everyday lives to develop insights and discover knowledge relevant to their personal lives.

The Workshop

At PVA 2014 (http://innovis.cpsc.ucalgary.ca/P/Vis), we will identify and explore research directions and design criteria for PV & PVA. Our goal is to call research attention to PV & PVA, to engage the design community in this timely and growing field, and to establish a community and common vision for researchers and practitioners working in this space.

Participants will be invited to submit to the July/Aug 2015 IEEE Computer Graphics and Applications Special Issue on Personal Visualization and Visual Analytics.

Workshop Program

0830-0900; Arrivals
0900-0915; Introductory remarks (Organizers)
0915-1030; Session 1: two-minute introductions.
1030-1100; Morning Break
1100-1230; Session 2: breakout groups: 3 most important PVA design topics or research directions are?
1230-1400; Lunch
1400-1430; Session 3: assembling our research directions
1430-1500; Afternoon Break
1500-1630; Session 4: breakout groups: research directions: working out the details
1630-1700; Session 4: assembling the details and planning future collaborations
1900; Workshop dinner!

Benefits and Significance of Workshop Theme

Personal visualization and personal visual analytics is an emerging research field that has been gaining substantial enthusiasm recently. The visualization and visual analytics communities are just beginning to realize that their techniques can be adapted and exploited to support people's non-professional activities. However, the design and research challenges encountered in personal visual analytics are somewhat different than those in traditional visualization and visual analytics. In addition, researchers and practitioners working on PV & PVA applications are split across various fields (visualization, HCI, design, etc.). In order to advance PV & PVA research in more than a piecemeal fashion, we need to establish a worldwide community of researchers and together build a common vision and set of research directions.

Biographies of the Workshop Organizers

Sheelagh Carpendale is a CRC in Information Visualization at the University of Calgary, where she leads the Innovations in Visualization (InnoVis) Research Group. Her research on information visualization, large interactive displays, and new media draws on her dual background in Computer Science and Visual Arts.

Melanie Tory is an Associate Professor of Computer Science at the University of Victoria where she leads the Visual Interaction Design research group. Her research interests focus on visualization and visual analytics, recently including applications of home energy conservation and personal fitness.

Anthony Tang is an Assistant Professor of Computer Science at the University of Calgary. His research is in Computer Supported Cooperative Work (CSCW) and Ubiquitous Computing, including the integration of mobile devices in large display environments, personal informatics, and telecommunication technologies for collaborative work.

References

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[4] Quantified Self. http://quantifiedself.com.