

GIScience 2016 Workshop on *Understanding Spatial Data (Big and Small) with Visual Analytics (SpatialVA'16)*

Website: <http://viz.icaci.org/SpatialVA2016/>

The workshop is organised by the International Cartographic Association (ICA) Commission on Visual Analytics.

Workshop Overview

The workshop calls for **new visual analytics methods and applications for spatial and spatio-temporal data** which demonstrate the usefulness of these techniques for analytical reasoning about space and time. We are particularly interested in how interactive visualisations can support knowledge construction and insights from spatial data, either big or small.

The past decade has seen a dramatic development in terms of spatial data collection capabilities, resulting in ubiquitous availability of complex large data sets. Many new analytical methods have been developed to explore these data and one of the popular approaches is connecting these methods with interactive visualisations in order to facilitate their interpretation. This is done in **Visual Analytics**, which is *the science of analytical reasoning, supported by interactive visual interfaces*.

The term Visual Analytics was first defined ten years ago (Thomas and Cook, 2005, *Illuminating the path*) and the last decade has seen many developments in this area. However, many challenges remain. One of these is related to the following recommendation from the 2005 research agenda:

Visual analytics should build upon theoretical foundations of reasoning, sense-making, cognition and perception to create visually enabled tools to support analytical reasoning about complex and dynamic problems.

This recommendation calls for development of a theory that will describe **how interactive visual discourse works in support of analytical reasoning**. While there have been many examples of excellent technological solutions in Visual Analytics, as well as user evaluations, there has been less consideration for the basic principles of how visual discourse supports analytical reasoning. This workshop is an attempt to address this gap by specifically encouraging contributions that address this challenge.

We intend for this workshop to reach the widest possible audience, and therefore call for submissions in **any application area using any type of spatial or spatio-temporal data**. We encourage approaches that take advantage of both spatial and temporal characteristics of such data, those that allow analysis across different spatial or temporal scales and those that provide new dynamic interactive visualisations for data exploration. We encourage submissions to explicitly consider how the proposed visual approach supports analytical reasoning about the data and ideally, demonstrate how the inclusion of the interactive visualisations into the analysis process aids understanding and decision-making.

Work-in-progress and **student-led submissions** are also *highly encouraged* as this workshop is an excellent forum to share new ideas and receive feedback.

Topics of interest include (but are not limited to):

- New visual analytics methods for spatial or spatio-temporal data.

- Applications of using new or existing spatio-temporal visual analytics methods in any discipline.
- Evaluations of visual analytics approaches that help us understand how users apply such tools.
- Theoretical demonstrations and frameworks for visual support of analytical reasoning.
- Advances in knowledge construction and reasoning about spatial and temporal phenomena and processes.

Workshop Format and Submission

This is a full-day workshop and will consist of two parts: 1) keynote talks by two well-known Visual Analytics experts (details will be published on the workshop website) and 2) short presentations of accepted extended abstracts.

We invite **extended abstracts of 1500-2000 words**. Please, use the same template as for the Extended Abstract of the main GIScience conference. The pdf template is provided at the main conference page (http://giscience.geog.mcgill.ca/?page_id=33), while for simplicity on our website (<http://viz.icaci.org/SpatialVA2016/>) we provide a similar word template.

Submission will be through the EasyChair system – see workshop website for details: <http://viz.icaci.org/SpatialVA2016/>

Workshop Outcomes

Contributions will be reviewed by the organisers and the members of programme committee. Accepted extended abstracts will be published in **GIScience 2016 proceedings** – for more info on proceedings, see the webpage of the GIScience 2016 conference: <http://giscience.geog.mcgill.ca/>

Following the workshop we plan to invite the participants to extend their abstracts into full papers for **a special issue of a journal**, providing an opportunity to incorporate feedback from the workshop prior to journal publication. Our intention is to take stock of submissions and their quality before making a decision to pursue a particular journal.

Important Dates

- Deadline for extended abstracts: **15 April 2016**
- Notification of acceptance for extended abstracts: **1 June 2016**
- Final version of extended abstracts (prepared after any required revisions): **10 July 2016**
- Workshop at GIScience conference: **27 Sept 2016**

Workshop Organisers

- **Urška Demšar** – Lecturer (Assistant Professor), School of Geography & Geosciences, University of St Andrews, UK
- **Anthony Robinson** – Assistant Professor of Geography and Assistant Director of the GeoVISTA research center at The Pennsylvania State University, United States.

Programme Committee

See workshop homepage: <http://viz.icaci.org/SpatialVA2016/>