EuroVA 2011 Workshop
EuroVis 2011
The Program
EG/IEEE Symposium on Visualization
**Important Information**

**Important phone numbers**
- Bergen Taxi 07000
- Fire 110
- Police 112
- Medical emergency 113

**WI-FI access**
- Connect to: “Hotel Terminus”
- Password: “Terminus400”

**Logistic questions**
For logistic questions, feel free to ask our student volunteers. They are wearing blue T-shirts and at least one should be available at the conference reception.

**Thursday, 2nd June**
Please beware that 2nd June is a public holiday in Norway. All shops have Sunday opening hours.

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**Bergen and Surroundings**

**Sightseeing in Bergen**
If you plan to visit more sights during short time, it might pay off to purchase the Bergen Card also available at the tourist office.

The following sights are worth to be seen: the fish market, Bryggen (UNESCO heritage), the Hanseatic museum, the Bergen Kunsthall, Håkonshallen and the Rosenkrantz Tower.

When the weather is nice, it is worth to hike the hills Fløyen (320m) or Ulriken (643m) and enjoy the spectacular views of the Bergen fjord area.

Other interesting sight beyon the city center are the wooden church, Fantoft Stavkirke, and Trolldaugen, the home of composer Edward Grieg.

**Other Cultural Activities**
For those who are fond of jazz could the Nattjazz (norw. jazz night) be a very interesting highlight of your leisure activities in Bergen. Festspillene is an annual cultural festival held in Bergen from the end of May to the beginning of June.

**Shopping in Bergen**
In the city center, you will find a variety of shops from small boutiques and kiosks to shopping malls. In the summer time, many stalls are selling souvenirs on the fish market. Other souvenir stores in the city are located on Bryggen. Some shopping malls are located in the area of Torgallmenningen and nearby streets. Many smaller boutiques and shops can be found also around the streets Kong Oscars Gate and Marken.

**Dining out**
Good bargains: Zupperia Nordahl Bruns gt. 9
Rather expensive: Boha Vaskerelven 6
Egon Vetrildsalmenningen 2 Pottetkelleren K. Oscars gt. 1A
Spisekroken Klostergaten 8

**Beyond Bergen**
Norway in a nutshell offers a variety of trips to norwegian fjords from one-day to several days trips. Visit [http://www.norwaynutshell.com](http://www.norwaynutshell.com) for details.

**More Info**
Useful Maps

Hotel Terminus

Bergen

LEGEND: Bergen
A: Hotel Terminus main conference hotel
B: Bryggen UNESCO heritage site
C: Fløien Folkrestaurant social event dinner
D: Fløibanen station social event transportation
E: Tårnsalen EuroVA+EuroVis city reception
F: Festplassen airport Coach stop, from the airport
G: Radisson Blu Hotel Norge airport Coach stop, to the airport

LEGEND: Hotel Terminus
○: Terminus Hall, Forskjønnelsen paper sessions
○: Brasseri, Bull and Welhaven lunches
○: WC or Garderobe
○: Foyée registration, coffee
○: Grand Whiskybar coffee
○: Ambrosia EuroVis poster presentation
**Keynote by Brian Fisher**

**Visual Analytics as a Cognitive Science**

This talk explores the larger implications of visual analytics—“the science of analytical reasoning facilitated by interactive visual interfaces”—for cognitive science and informatics. I will argue that the methods that will advance this new science go beyond those of natural science and engineering, and will require researchers to create a new translational cognitive science of analytic systems. We will begin by building field study methods that characterize human and computational cognitive capabilities as they are used for decision-making in a range of situations. Because findings from field methods do not generalize well, we must then investigate these proposed capabilities in the laboratory. Finally, we must build mathematical and computational theories that predict the impact of changes in technology on cognitive processes in technology-rich environments. These methods will only suffice until processing capacity reduces the lag between an analyst’s query and a graphical response to a certain level. When the response is generated at the same pace as the sequence of cognitive operations that the analyst performs, human and computational processes become “close coupled”. At this point the distinction between processes originating from the mind of the analyst (i.e. a mental representation) versus the computer (i.e. a visualization) become impossible to determine, and the subsystems we will study will seamlessly incorporate natural and artificial processes.
Comics: A Medium in Transition

More than any other popular art form, comics are sensitive to the formats, platforms, and devices that connect them to readers. How can this unique medium communicate content effectively when all assumptions about its form are up for grabs? Author and comics artist Scott McCloud puts a blizzard of new trends into perspective in a fast-moving visual presentation.

Program EuroVis

Registration
8:00—9:00

Symposium Opening Session
Terminus Hall
9:00—9:30

Keynote
Terminus Hall
9:30—10:30 Chair: I. Viola
Comics: A Medium in Transition
S. McCloud

Coffee break
Foyée, Grand Whiskybar
10:30—11:00

Paper Sessions
Terminus Hall, Forskjønningen
11:00—12:15

2D Visualization by Aggregation
Terminus Hall
Chair: R. Westermann

Curve Density Estimates
O. Daane Lampe, H. Hauser

Visual Coherence for Large-Scale Line-Plot Visualizations
P. Muigg, M. Hadwiger, H. Doleisch, E. Gröller

Progressive Splatting of Continuous Scatterplots and Parallel Coordinates
J. Heinrich, S. Bachthaler, D. Weiskopf

Molecular Data Visualization
Forskjønningen
Chair: F. Post

Topology-based Visualization of Transformation Pathways in Complex Chemical Systems

Interactive Exploration of Protein Cavities
M. Krone, M. Falk, S. Roehm, J. Pleiss, T. Ertl

Illustrative Molecular Visualization with Continuous Abstraction
M. van der Zwan, W. Luiks, H. Bekker, T. Isenberg

Lunch break
Bull and Wehaven (0. etasje), Brasseriet (1. Etasje)
12:30—13:45

Paper Sessions
Terminus Hall, Forskjønningen
13:45—15:00

Temporal Data Visualization
Terminus Hall
Chair: K. Matković

A Visual Analytics Approach for Peak-Preserving Prediction of Large Seasonal Time Series
M. Hao, H. Janetzko, S. Mittelstädt, W. Hill, U. Dauel, D. Keim, M. Marwah, R. Sharma

Visual Exploration of Time-Series Data with Shape Space Projections
M. Ward, Z. Guo

Interactive Visual Analysis of Temporal Cluster Structures
Č. Turkay, J. Panulek, N. Reuter, H. Hauser

Coffee break
Foyée, Grand Whiskybar
15:00—15:30

Flow Visualization
Terminus Hall
Chair: X. Tricoche

Efficient Parallel Vectors Feature Extraction from Higher-Order Data
C. Pagot, D. Osmani, P. Sadlo, D. Weiskopf, T. Ertl, J. Comba

Lagrangian Coherent Structures with Guaranteed Material Separation
T. Gerner, M. Otto, R. Peikert, H. Theisel

Energy-scale Aware Feature Extraction for Flow Visualization

Visual Reconstructability as a Quality Metric for Flow Visualization
J. Jäncke, T. Weisner, D. Chung, R. Laramee, P. Townsend, M. Chen

Evaluation
Forskjønningen
Chair: C. Botha

A User Study of Visualization Effectiveness Using EEG and Cognitive Load
E. Anderson, K. Potter, L. Matzen, J. Shepherd, G. Preston, Claudio Silva

Evaluation of the Visibility of Vessel Movement Features in Trajectory Visualizations
N. Willems, H. van de Watering, J. van Wijk

Perceptual Evaluation of Ghosted View Techniques for the Exploration of Vascular Structures and Embedded Flow
A. Baer, R. Gasteiger, D. Cunning-ham, B. Preim

An Evaluation of Visualization Techniques to Illustrate Statistical Deformation Models
J. Caban, P. Rieger, T. Yoo

Poster Session
Ambrosia
17:10—18:10 EuroVis poster presentations
6

Thursday EuroVis

Program EuroVis

Registration
8:30—9:00

Paper Sessions
Terminus Hall, Forskjønnerlens
09:00—10:15

Overview&Detail, Focus+
Context Vis. Terminus Hall
Chair: H. Doleisch
Dynamic Insets for Context-Aware Graph Navigation
S. Ghani, N. H. Riche, N. Elmqvist
Visual Boosting in Pixel-based Visualizations
D. Oelke, H. Janetzko, S. Simon, K. Neuhaus, D. A. Keim
The Undistort Lens
J. Brosz, S. Carpendale, M. Naceta
The Undistort Lens
J. Brosz, S. Carpendale, M. Naceta

Topological Features in 2D Symmetric Higher-Order Tensor Fields
T. Schultz
Stable Morse Decompositions for Piecewise Constant Vector Fields on Surfaces
A. Symczak

Coffee break
Foyée, Grand Whiskybar
10:15—10:45

Paper Sessions
Terminus Hall, Forskjønnerlens
10:45—12:25

Parameter Spaces and Analysis
Terminus Hall
Chair: J. Roerdink
Assisted Descriptor Selection Based on Visual Comparative Data Analysis
S. Bremm, T. von Lanzen, T. Pfaffelmoser, M. Reitinger, T. von Lanzen,
W. Berger, H. Piringer, P. Filzmoser, W. Berger, H. Piringer, P. Filzmoser,
C. Auer, I. Hotz
Visualizing of Time-Series Data in Parameter Space for Understanding Facial Dynamics
G. Tan, H. Fang, A. Aubrey, P. Grant, P. Rossin, D. Marshall, M. Chen
Uncertainty-Aware Exploration of Continuous Parameter Spaces Using Multivariate Prediction
W. Berger, H. Piringer, P. Filzmoser, E. Gröller
Structural Decomposition Trees
D. Engel, R. Rosenbaum, B. Hamann, H. Hagen

Volume Visualization
Forskjønnerlens
Chair: M. Hadwiger
Probabilistic Marching Cubes
K. Pottikow, K. Weber, H.-C. Hege
Depth Of Field Effects for Interactive Direct Volume Rendering
M. Schott, A. V. Grossel, T. Martin, V. Peregara, S. Smith, C. Hansen
Visualizing the Positional and Geometrical Variability of Iso-surfaces in Uncertain Scalar Fields
T. Pfaffelmoser, M. Reitinger, R. Westermann
Fast Extraction of High-quality Crease Surfaces for Visual Analysis
S. Barakat, N. Andrysco, K. Tischler

Coffee break
Foyée, Grand Whiskybar
16:00—16:30

Paper Sessions
Terminus Hall, Forskjønnerlens
16:30—17:45

Graphs&Networks
Terminus Hall
Chair: M. Chen
Visualizing the Evolution of Community Structures in Dynamic Social Networks
K. Corda, C. Tantipathananandh, A. Johnson, J. Leigh, T. Berger-Wolf
ImPrEd: An Improved Force-Directed Algorithm that Prevents Nodes from Crossing Edges
F. Simonetto, D. Archambault, D. Auber, R. Bourqui
Visual Recommendations for Network Navigation
T. Czovrnasen, I. Liao, Y. Wuy, K.-L. Ma

Social Event
Floyen Folkerestaurant
19:00—23:45 You can either take the Flåibanen to the top of the hill or hike. Student volunteers will depart from the Terminus hotel at 18:10 and 18:30 and guide you to the Flåibanen station. Our guiding staff will start hiking from the Flåibanen station at 18:30. If you wish to hike, you should leave Terminus at 18:10.

Floyd Observatory
The social event of EuroVis 2011 will be held in the Floyd Observatory on the top of the hill Fløyen 320m. For the transport, use either use the enclosed return ticket for the Flåibanen train or hike (see the map). We hope that the weather will allow us to enjoy the dinner at the almost-midnight sunset over the Bergen fjord.

Fløyen Folkerestart
The social event of EuroVis 2011 will be held in the Fløyen Folkerestart on the top of the hill Fløyen 320m. For the transport, use either use the enclosed return ticket for the Flåibanen train or hike (see the map). We hope that the weather will allow us to enjoy the dinner at the almost-midnight sunset over the Bergen fjord.

Program EuroVis

Lunch break
Foyée, Grand Whiskybar
12:25—13:00

Vis. Challenges from our Sponsors
Terminus Hall, Forskjønnerlens
13:45—14:45

Terminus Hall Chair: E. M. Lidal
CMR
Schlumberger
IMR

Paper Sessions
Terminus Hall, Forskjønnerlens
14:45—16:00

Spatiotemporal Data Visualization
Terminus Hall
Chair: H. Hagen
Flowstrates: An Approach for Visual Exploration of Temporal Origin-Destination Data
I. Boyandin, E. Bertini, P. Bak, D. Lalanne
Temporal Visualization of Boundary-based Geoinformation Using Radial Projection
Y. Drocourt, R. Westermann, K. Schauer, T. Murray, S. Bevan, M. Chen
Visualization and Analysis of Eddies in a Global Ocean Simulation
S. Williams, M. Hecht, M. Petersen, R. Streitz, M. Malnud, J. Ahrens, M. Hlavatschka, B. Hamann

Biological Data Visualization
Forskjønnerlens
Chair: L. Linsen
WaveMap: Interactively Discovering Features From Protein Flexibility Matrices Using Wavelet-based Visual Analytics
S. Barlowe, T. H. Li, J. Yang, D. Livesay, D. Jacobs, J. Motton, D. Verma
Visualising Errors in Animal Pedigree Genotype Data
M. Graham, J. Kennedy, T. Paterson, A. Law
Pathway Preserving Representation of Metabolic Networks
A. Lambert, J. Dobus, R. Bourqui

Coffee break
Foyée, Grand Whiskybar
19:00—23:45 You can either take the Flåibanen to the top of the hill or hike. Student volunteers will depart from the Terminus hotel at 18:10 and 18:30 and guide you to the Flåibanen station. Our guiding staff will start hiking from the Flåibanen station at 18:30. If you wish to hike, you should leave Terminus at 18:10.

Medical Data Visualization
Forskjønnerlens
Chair: H.-C. Hege
A Shader Framework for Rapid Prototyping of GPU-Based Volume Rendering
C. Riedler, J. Bernat, J. Min, H. K. Hahn
Anatomy-Guided Multi-Level Exploration of Blood Flow in Cerebral Aneurysms
R. Westermann, M. Arendt, O. Beuning, M. Skalej, B. Hamann
Prostate Cancer Visualization from MR Imagery and MR Spectroscopy
J. Marino, A. Kaufman
Program EuroVis

Registration
8:30—9:00

Paper Sessions
Terminus Hall, Forskjønningen
9:00—10:40

Multidimensional Data Visualization
Terminus Hall
Chair: P. Rheingans

Piecewise Laplacian-based Projection for Interactive Data Exploration and Organization
F. Paukovitch, D. Eler, J. Poco, C. Botha, R. Minghim, L. Nonato

A Gradient-Based Comparison Measure for Visual Analysis of Multifield Data
S. Nagaraj, V. Natarajan, R. Nanjundiah

A Framework for Exploring Multidimensional Data with 3D Projections

Visualizing High-Dimensional Structures by Dimension Ordering and Filtering using Subspace Analysis
B. Ferdosi

Hierarchies and Large-Scale Visualization
Forskjønningen
Chair: C. Hansen

Tablorer—An Interactive Tree Visualization System for Tablet PCs
H.-J. Shin, G.-H. Park, J.-H. Han

Comparison of Multiple Weighted Hierarchies: Visual Analytics for Microbe Community Profiling

Automatic Registration of Multi-Projector Domes Using a Single Uncalibrated Camera
B. Sajadi, A. Majumder

In-situ Sampling of a Large-Scale Particle Simulation for Interactive Visualization and Analysis
J. Woodring, J. Athens, J. Figg, J. Wendelberger, K. Holtmann

Coffee break
Foyé, Grand Whiskybar
10:40—11:10

Closing Ceremony
Terminus Hall
11:10—11:40

Capstone
Terminus Hall
11:40—12:40 Chair: H. Hauser
TNBA M. E. Gröller

Lunch or Lunch To Go
Bull and Welhaven (0. etasje), Brasseri (1.Et.)
12:40

Capstone by M. Eduard Gröller

TNBA
Eduard Gröller is a Professor at the Institute of Computer Graphics and Algorithms (ICGA), Vienna University of Technology. His research interests include computer graphics, flow visualization, volume visualization, medical visualization, and information visualization. He is heading the visualization group at ICGA at the Vienna University of Technology, Austria. The group performs basic and applied research projects in the area of scientific visualization. He is a scientific proponent and key researcher of the VRVis research center. The center performs applied research in visualization, rendering, and visual analysis. Since 2005, he is an adjunct professor of computer science at the University of Bergen, Norway. Meister Gröller is known also for his humor. Therefore, we are looking forward to his talk on the topic TNBA (to not be announced).

Local Organizing Committee

Hauser, Helwig
Viola, Ivan

Angelelli, Paolo
Birkeland, Åsmund
Brambilla, Andrea
Daae Lampe, Ove
Kehrer, Johannes
Lidal, Endre M.
Natali, Mattia
Parulek, Július
Patel, Daniel
Pobitzer, Armin
Šoltészová, Veronika
Turkay, Çağatay

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