Intro

Tamara Munzner
Department of Computer Science
University of British Columbia

DESIGNING for PEOPLE

CAIDA

UBC Data Science Institute

Utah Viz Course Intros
Mar 1 2021

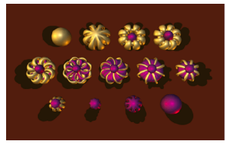
http://www.cs.ubc.ca/~tmm/talks.html#utah21intro

@tamaramunzner

About me

- technical staff, Geometry Center 1991-1995

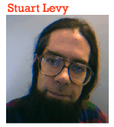
Geometry Center: math vis videos, software



Outside In

The Shape of Space

Stuart Levy



Mark Phillips

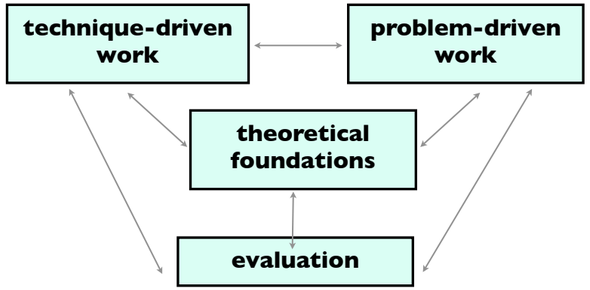
Delle Maxwell

Geomview

About me

- technical staff, Geometry Center 1991-1995
- PhD @ Stanford w/ Pat Hanrahan, 1995-2000
- [DEC/Compaq] Systems Research Center (SRC), 2000-2002
- UBC, 2002-now

A quick taste of my own work!

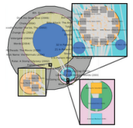


Technique-driven: Graph/network drawing

T F E P

Daniel Archambault

David Auber (Bordeaux)



https://youtu.be/AWXAe8zvkt8

TopoLayout
SPF
Grouse
GrouseFlocks
TugGraph

Benjamin Renoust

Guy Melançon (Bordeaux)

Detangler
https://youtu.be/QOtnHSsUV6k

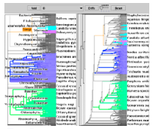
Technique-driven: Tree drawing

T F E P

Zipeng Liu

Shing Hei Zhan

Aggregated Dendrograms
https://youtu.be/2SLcz7KNLJw



TreeJuxtaposer
https://youtu.be/GdaPj8a9QEo

Evaluation experiments: Graph/tree drawing

T F E P

Dmitry Nekrasovski

Adam Bodnar

Joanna McGrenere

Stretch and squish navigation

Jessica Dawson

Joanna McGrenere

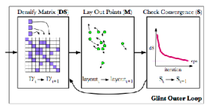
Search set model of path tracing

Technique-driven: Dimensionality reduction

T F E P

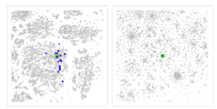
Stephen Ingram

Glimmer



Glint

DimStiller

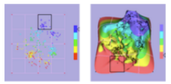


QSNE

Evaluation experiments: Dimensionality reduction

T F E P

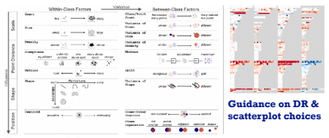
Melanie Tory



Points vs landscapes for dimensionally reduced data

Michael Sedlmair

Melanie Tory

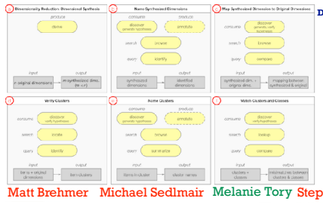


Taxonomy of cluster separation factors

Guidance on DR & scatterplot choices

Evaluation in the field: Dimensionality reduction

T F E P



DR in the Wild

Matt Brehmer

Michael Sedlmair

Melanie Tory

Stephen Ingram

Problem-driven: Genomics

T F E P

Aaron Barsky

Jenn Gardy (Microbio)

Robert Kincaid (Agilent)

Cerebral
https://youtu.be/76HhG1FQngI

Miriah Meyer

Hanspeter Pfister (Harvard)

MizBee
https://youtu.be/86p7brwuz2g

MulteeSum, Pathline

Problem-driven: Genomics, fisheries

T F E P

Joel Ferstay

Cydney Nielsen (BC Cancer)

Variant View
https://youtu.be/AHDnv_qMXxQ

Vismon https://youtu.be/h0kHoS4VYmk

Maryam Booshehrian

Torsten Moeller (SFU)

Problem-driven: Tech industry

T F E P

Heidi Lam

Diane Tang (Google)

SessionViewer: web log analysis
https://youtu.be/T4MaTZd56G4

Peter McLachlan

Stephen North (AT&T Research)

LiveRAC: systems time-series https://youtu.be/Id0c3H0VSkw

Problem-driven: Building energy mgmt, journalism

T F E P

Matt Brehmer

Kevin Tate (Pulse/EnerNOC)

Energy Manager

Matt Brehmer

Stephen Ingram

Jonathan Stray (Assoc Press)

Overview
https://vimeo.com/71483614

Problem-driven: Current data science

T F E P

Kimberly Dextras-Romagnino

recent work:
Segmentifier
(Mobify)

e-commerce clickstreams

build tools for human-in-the-loop visual data analysis

Michael Oppermann

recent work:
Ocupado
(Sensible Building Science)

wifi proxy for real-time building occupancy

visual analytics for facilities management

https://youtu.be/TobYDFeISOg

https://youtu.be/KcwiVK8eUdw

Curation & Presentation: Timelines

T F E P

TimeLineCurator
https://vimeo.com/123246662

Matt Brehmer

Johanna Fulda
(Sud. Zeitung)

Timelines Revisited
timelinesrevisited.github.io/

Matt Brehmer

Bongshin Lee
(Microsoft)

Benjamin Bach
(Microsoft)

Nathalie Henry-Riche

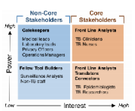
Theoretical foundations: Typologies

T F E P

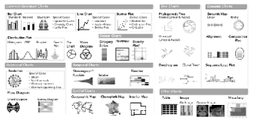
Matt Brehmer

Abstract Tasks

Anamaria Crisan



Regulatory & Organizational Constraints



GEViT: Genomic Epidemiology Visualization Typology

Theoretical foundations

T F E P

- Visual Encoding Pitfalls
  - Unjustified Visual Encoding
  - Hammer In Search Of Nail
  - 2D Good, 3D Better
  - Color Cacophony
  - Rainbows Just Like In The Sky
- Strategy Pitfalls
  - What I Did Over My Summer
  - Least Publishable Unit
  - Dense As Plutonium
  - Bad Slice and Dice

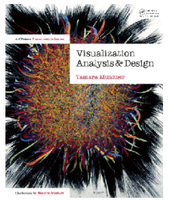
Papers Process & Pitfalls

Design Study Methodology

Nested Model

Michael Sedlmair

Miriah Meyer

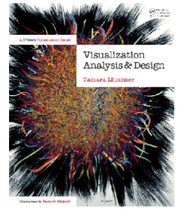


Visualization Analysis & Design

More Information

@tamaramunzner

- this talk
  http://www.cs.ubc.ca/~tmm/talks.html#utah21intro
- book page (including tutorial lecture slides)
  http://www.cs.ubc.ca/~tmm/vadbook
  - 20% promo code for book+ebook combo: HVN17
  - http://www.crcpress.com/product/isbn/9781466508910
  - illustrations: Eamonn Maguire
- papers, videos, software, talks, courses
  http://www.cs.ubc.ca/group/infovis
  http://www.cs.ubc.ca/~tmm



Visualization Analysis and Design.
Munzner. A K Peters Visualization Series, CRC Press, Visualization Series, 2014.