

# Intro

**Tamara Munzner**  
Department of Computer Science  
University of British Columbia

Utah Viz Course Intros  
Apr 4 2022

<http://www.cs.ubc.ca/~tmm/talks.html#utah22intro>



# About me

- technical staff, Geometry Center 1991-1995

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# Geometry Center: math vis videos, software



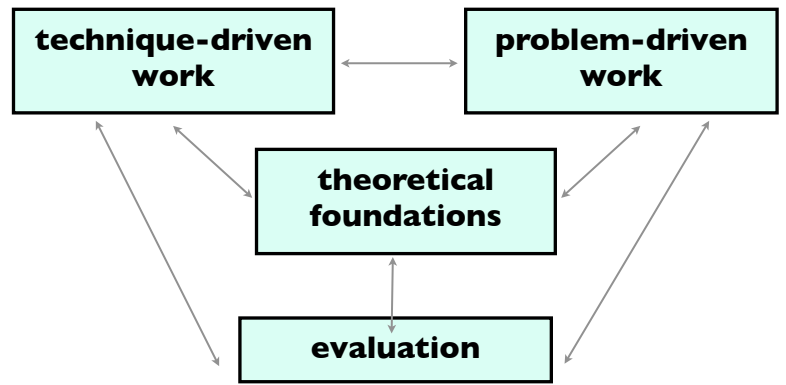
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# About me

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

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# A quick taste of my own work!



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# Technique-driven: Graph/network drawing

**Daniel Archambault** **David Auber (Bordeaux)** <https://youtu.be/AWXAe8zvkt8>

**Benjamin Renoust** **Guy Melançon (Bordeaux)** <https://youtu.be/QOInHSsUV6k>

TopoLayout  
SPF  
Grouse  
GrouseFlocks  
TugGraph

Detangler  
<https://youtu.be/QOInHSsUV6k>

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# Technique-driven: Tree drawing

**Zipeng Liu** **Shing Hei Zhan**

Aggregated Dendrograms  
<https://youtu.be/ZSLcz7KNLJw>

TreeJuxtaposer  
<https://youtu.be/GdaPi8a9QEO>

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# Evaluation experiments: Graph/tree drawing

**Dmitry Nekrasovski** **Adam Bodnar** **Joanna McGrenere**

Stretch and squish navigation

**Jessica Dawson** **Joanna McGrenere** **Zipeng Liu**

Search set model of path tracing

Sprawiter Metric

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# Technique-driven: Dimensionality reduction

**Stephen Ingram**

Glimmer

Glint

DimStiller

QSNE

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# Evaluation experiments: Dimensionality reduction

**Melanie Tory**

Points vs landscapes for dimensionally reduced data

**Michael Sedlmair** **Melanie Tory**

Taxonomy of cluster separation factors

Guidance on DR & scatterplot choices

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# Evaluation in the field: Dimensionality reduction

DR in the Wild

**Matt Brehmer** **Michael Sedlmair** **Melanie Tory** **Stephen Ingram**

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# Technique-driven: Recommenders

**Anamaria Crisan**

GEVITec

**Michael Oppermann** **Robert Kincaid (Tableau)**

<https://youtu.be/SRAWFr4tBJA>  
<https://youtu.be/7-7v4m-1bVY>

VizCommitter  
VizSnippets

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# Problem-driven: Genomics

**Aaron Barsky** **Jenn Gardy (Microbio)** **Robert Kincaid (Agilent)**

Cerebral  
<https://youtu.be/76HhG1FQngI>

**Miriam Meyer** **Hanspeter Pfister (Harvard)**

MizBee  
<https://youtu.be/86p7brwuz2g>

MulteeSum, Pathline

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# Problem-driven: Genomics, fisheries

**Joel Ferstay** **Cydney Nielsen (BC Cancer)**

Variant View  
[https://youtu.be/AHDnv\\_qMXxQ](https://youtu.be/AHDnv_qMXxQ)

**Maryam Booshehrian** **Torsten Moeller (SFU)**

Vision  
<https://youtu.be/h0kHoS4VYmk>

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# Problem-driven: Tech industry

**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/ld0c3H0VSkw>

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# Problem-driven: Building energy mgmt, journalism

**Matt Brehmer** **Kevin Tate (Pulse/EnerNOC)**

Energy Manager

**Matt Brehmer** **Stephen Ingram** **Jonathan Stray (Assoc Press)**

Overview  
<https://vimeo.com/71483614>

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# Problem-driven: Data science

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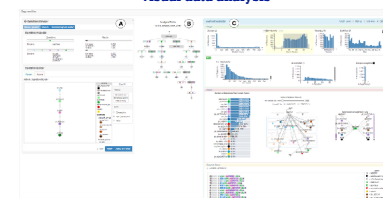
Kimberly Dextras-Romagnino



Segmentifier (Mobify)

e-commerce clickstreams

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



<https://youtu.be/TobYDFeISQg>

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Michael Oppermann



Ocupado (Sensible Building Science)

wifi proxy for real-time building occupancy

visual analytics for facilities management

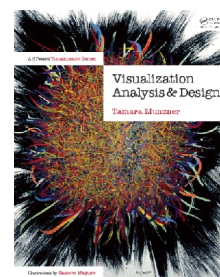


<https://youtu.be/KcwjVK8eUdw>

## More Information

- this talk <http://www.cs.ubc.ca/~tmm/talks.html#utah22intro>
- book <http://www.cs.ubc.ca/~tmm/vadbook>
- papers, videos, software, talks, courses <http://www.cs.ubc.ca/group/infovis>  
<http://www.cs.ubc.ca/~tmm>

@tamaramunzner



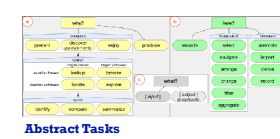
Visualization Analysis and Design. Munzner. A K Peters Visualization Series, CRC Press, Visualization Series, 2014.

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# Theoretical foundations: Typologies

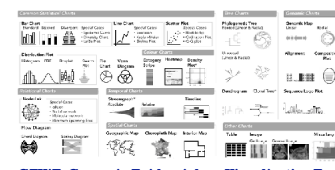
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Matt Brehmer



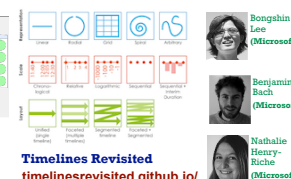
Abstract Tasks

Anamaria Crisan



GEVIT: Genomic Epidemiology Visualization Typology

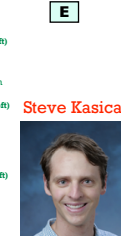
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Timelines Revisited [timelinesrevisited.github.io/](http://timelinesrevisited.github.io/)



TableScraps



Steve Kasica

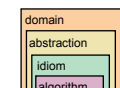
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# Theoretical foundations

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- Strategy Pitfalls
- What I Did Over My Summer
- Least Publishable Unit
- Dense As Plutonium
- Bad Slice and Dice



Papers Process & Pitfalls

Nested Model



Design Study Methodology



Data-First Design Studies

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Heidi Lam (Tableau)

Goals2Tasks

Goals2Tasks



Melanie Tory (Tableau)

Acquire

View

Assess

Pursue

Data Recon

Core Stakeholders

Non-Core Stakeholders

Collaborate

Power

Regulatory & Organizational Constraints

Interest

High

Low

Regulatory & Organizational Constraints

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Michael Sedlmair



Miriah Meyer



Anamaria Crisan

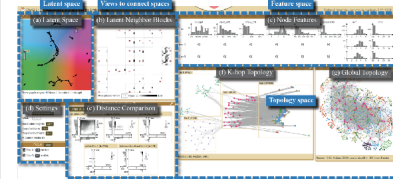
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# Machine Learning Curation

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CorGIE

Matt Brehmer



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<https://youtu.be/sQMF50aNTKI>



Zipeng Liu



Jürgen Bernard

Yang Wang (Uber/Facebook)



Adjutant

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