

DSIA 2018 - DAGSTUHL REPORT

CONNECTING VISUALIZATION AND
DATA MANAGEMENT RESEARCH



12. - 17. November 2017



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**DAYS 1 AND 2:
LOTS AND LOTS
OF ARGUING**

(EVENTUALLY....)

FOUR CHALLENGES

1) MAKING THE DATABASE INVISIBLE

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- ▶ Grand vision: what would it take for visualization applications/application writers to be able to ignore data management research?
- ▶ eg: Vega and Vega-Lite still don't know about DBs
 - ▶ conversely, DBs still (mostly) don't know about vis
 - ▶ What does VizQL look like 10 years from now?

2) REDUCING FRICTION IN APPLYING DATA MANAGEMENT FOR VISUALIZATION

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- ▶ How do interactive visualization constructs translate over to the DB layers? “rich queries”
- ▶ a linked view with a brush updated at 60fps, encoded in SQL, will make your local DBA very upset
- ▶ Domain-specific concerns: have you ever tried to write SQL queries against weather maps? Imagine multi-variate 3D data.

3) UNDERSTANDABILITY IN DATA DISCOVERIES

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- ▶ Foundations for Understandability: are we missing a right definition of understandability? Do fields like HCI and vis have better insight in how to take the human into account?
- ▶ “Right To Explanation”, GDPR!
- ▶ Guiding and Guarding for Genuine and False Discoveries: multiple comparisons is a serious, insidious problem

4) AN EVALUATION METHODOLOGY FOR VIS + DB SYSTEMS

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- ▶ What does it mean for a vis+db system to be better than another? How do we define this? How do we measure this?
- ▶ Benchmarks based on interaction traces
 - ▶ A standard for interaction traces is needed
- ▶ (See Leilani's talk just a few minutes from now!)

OUTLOOK

- ▶ CACM report to be submitted Any Day Now
- ▶ There are a number of research collaborations already happening because of this meeting - we're humbled and thrilled!

VIS PEOPLE: WE NEED TO CARE ABOUT DATA MANAGEMENT!

- ▶ For a long time we vis people rode Moore's law and didn't need to care about computational issues
 - ▶ we're no longer there!
- ▶ Please consider diving into the DSIA world, it's great here, and we need all the help we can get!

THANK YOU, AND WE'RE ALSO HIRING!



- **Sun., 2:20pm**, TTK Tutorial
- **Mon., 3:17pm**, Mingwei Li et al., Visualizing neuron activations of neural networks with the grand tour, VISxAI
- **Tues., 3:40pm**, Faust et al., DimReader: Axis lines that explain non-linear projections, InfoVis
- **Wed., 12:20pm**, Berger et al., A Generative Model for Volume Rendering, SciVis

We're recruiting!

- Open PhD Positions
- Two Open Postdoc Positions
- UA open faculty positions

