



The Future of Visualization Technology Vis in Practice

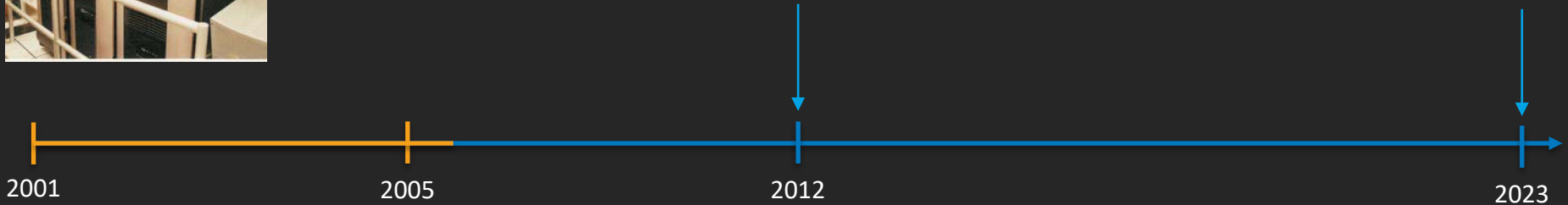
Kenny Gruchalla, Ph.D.
October 23, 2023

THE IMMERSIVE VISUALIZATION ROAD

~100K triangles



Gruchalla 2004



THE IMMERSIVE VISUALIZATION ROAD

~100K triangles



Gruchalla 2004



Gruchalla, et al. 2008



\$2M

Graphics
Compute
Commoditization



\$16K

2001

2005

2012

2023

THE IMMERSIVE VISUALIZATION ROAD

~100K triangles

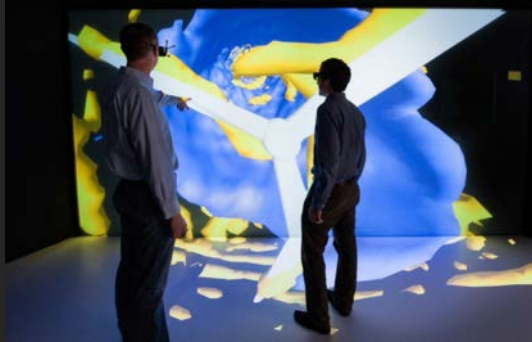


Gruchalla 2004



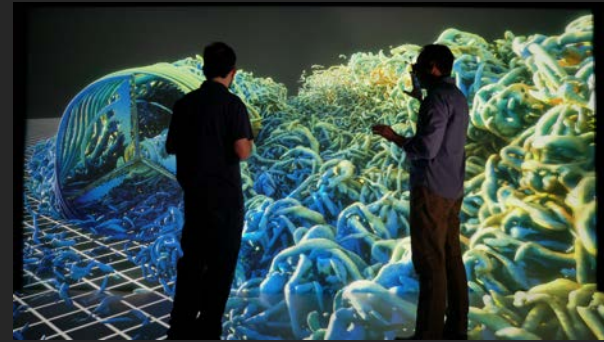
Gruchalla, et al. 2008

~3M triangles



Gruchalla & Brunhart-Lupo 2019

>100M triangles



Brunhart-Lupo & Sharm 2023



\$2M



\$16K

2001

2005

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THE IMMERSIVE VISUALIZATION ROAD

~100K triangles

~3M triangles



Gruchalla 2004



Gruchalla, et al. 2008



Gruchalla & Brunha



Whitlock, et al. 2020



Graphics Compute Commoditization

\$2M



\$16K

Commoditization
Coming?



Immersive Visualization Value



Improved Spatial
Judgments



Direct 3D
Interaction



High-Dimensional
Data



Collaboration



Gruchalla & Brunhart-Lupo, 2019



Brunhart-Lupo & Gruchalla, 2023



Brunhart-Lupo, et al. 2016



Bush, et al. 2017

WORKFLOW AUGMENTATION

All of our big successes have resulted from small augmentations to traditional workflows (not the replacement of them). A better qualitative understanding leading to quantitative changes in:

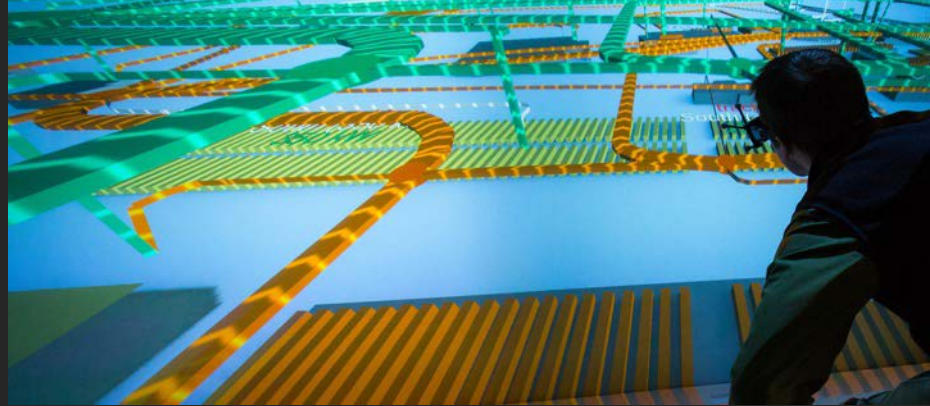
- Model design
- Model validation
- Data analysis



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FURTHER READING



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