Oculorama
exploring reality, in virtual reality

abstract & motivation

- Oculorama captures images of the world and explores them in an immersive virtual reality
- Immersive exploration of dangerous or distant environments
- Total cost less than $500

interpolated panoramas

image capture

system design

Stage 1
Capture pictures

Stage 2
Postprocess images

Stage 3
Render panoramas

3D rendering

- 2D panoramas are adjusted by rotation
- Produces 3D model with absolute coordinates

Conclusion

- Built low cost automatic panorama capture system
- Rendered multiple panoramas together to visualize rich scene
- Achieved rendering RGB-D data at 40 fps
- Built ability to explore virtual world in real time
- CGI and game design

Department of Computer and Information Science

Senior Project Poster Day 2015

University of Pennsylvania