

## Point Clouds + Unreal Worlds: An Introduction to Immersive Technologies

Arch 409/509

Thursday 8:30-11:30am

Instructor: Dawn Gilpin, [dgilpin@umich.edu](mailto:dgilpin@umich.edu)



Trevor Paglen, *Moving Through the Night Sky*, 2018

This course introduces students to advanced techniques in 3D laser scanning, Unreal Engine basics, and photogrammetry as technical extensions of disciplinary conventions in architecture representation. The course will focus on providing students with a comprehensive understanding of how these tools can be used to make more vivid design ideas, spatial narratives and positions developed in architecture studios. The course will cover a range of topics including:

- 3D Laser Scanning: Understanding the fundamentals of 3D laser scanning, including the equipment and software required, and how it can be used to capture accurate and detailed 3D models of real-world objects and environments.
- Unreal Engine: Understanding the fundamentals of this game engine, including how to use it to create immersive, real-time visualizations of architectural designs, and how to leverage its advance lighting and rendering capabilities enabling worldbuilding and spatial narrative scenario creation.
- Photogrammetry: Understanding the fundamentals of photogrammetry, including how to capture and process high-quality images to create accurate and detailed 3D models of real-world objects and environments.

Throughout the course, students will work on projects that will allow them to apply the skills they have learned in a practical context. They will also have the opportunity to collaborate with peers to develop more advanced and complex projects that will challenge their skills and design positions.