

ARLab, Bentley Systems

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1 LAB OBJECTIVES

Bentley Systems is a software company dedicated to advancing the world's infrastructure. It develops more than 300 software products for the design, construction and maintenance of civil infrastructure in application areas such as roads & railways, buildings, energy production, industrial plants, oil & gas, etc.

Bentley Systems' ARLab is an industrial applied research laboratory dedicated to exploring new technologies and academic research results and to finding potential applications of those in the infrastructure world. Most of its projects are related with augmented and virtual reality, and generally consist of proofs of concept.

2 PAST PROJECTS

Over the past 11 years, our team explored several potential applications of AR and VR in the field of civil infrastructure engineering. Some of the most recent projects include:

2.1 Subsurface utility engineering



Evaluating the potential of the Microsoft HoloLens for displaying vertical projection of subsurface utility pipes on the road surface.



Using situated simulation based on photorealistic meshes to provide accurate and robust augmentations of city environments.

2.2 Road design



Road design in a photorealistic virtual environment.

2.3 Construction and building maintenance



Displaying virtual excavations to facilitate building maintenance.

2.4 Plant maintenance and design



Using the Microsoft HoloLens for plant maintenance and pipe design.

More proofs of concepts can be seen on:

<https://www.youtube.com/user/BEAppliedResearch/videos> .

3 COLLABORATIONS

Our team is currently working with Laval University (Québec, Canada) on a 3-year research project on augmented reality for municipal infrastructure. We welcome new collaborations with university research labs for infrastructure-related research investigations.