

Translational AI Center (TrAC) Seminar Spring 2024

Iro Armeni

April 17th at 1:00 PM (US Central Time)

More information and zoom link: <https://trac-ai.iastate.edu/event/trac-seminar-series-iro-armeni/>

Living Scenes: Creating and updating digital twins of evolving indoor scenes

Abstract

Buildings are like living organisms, i.e., they evolve over time due to interaction with natural phenomena and humans. How can we realistically maintain their digital twins throughout their lifespan? Or else, how can we maintain a living building model as the space is undergoing changes? In this talk, I will present some of my recent works that focus on creating and updating building replicas of geometry and semantics using visual data that depict the building undergoing changes over time as a result of human interaction. I will discuss handling both drastic changes in the building during construction and smaller changes on asset location and geometry during operation, while ensuring privacy and realistic implementations. The goal of this research line is to develop quantitative and data driven methods for better construction and operation monitoring, to ultimately create buildings that are more suitable for users.

Short Bio

Iro Armeni is an Assistant Professor of Civil and Environmental Engineering at Stanford University, leading the Gradient Spaces research group. She is interested in interdisciplinary research between Architecture, Civil Engineering, and Visual Machine Perception. Iro focuses on developing quantitative and data-driven methods that learn from real-world visual data to generate, predict, and simulate new or renewed built environments that place the human in the center. Iro's goal is to create sustainable, inclusive, and adaptive built environments that can support our current and future physical and digital needs. Iro completed her PhD at Stanford University in August 2020, Civil and Environmental Engineering Department, with a PhD minor at the Computer Science Department. Afterwards she was a Postdoctoral Fellow at ETH Zurich working at both the Computer Science and Civil, Environmental, and Geomatic Engineering Departments (2023). Prior to her PhD, she received an MSc in Computer Science (Ionian University-2013), an MEng in Architecture and Digital Design (University of Tokyo-2011), and a Diploma in Architectural Engineering (National Technical University of Athens-2009). Iro is the recipient of the ETH Zurich Postdoctoral Fellowship, the Google PhD Fellowship, and the MEXT Scholarship. She has also worked as an architect and consultant for both the private and public sector.

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