Partners

The Harvest4D Consortium consists of research groups specialising in Computer Graphics and Vision.

Technische Universität Wien – Vienna, Austria
Institute of Computer Graphics and Algorithms
Scientific Leader: Michael Wimmer

Universität Bonn – Bonn, Germany
Computer Graphics Group
Scientific Leader: Reinhard Klein

Technische Universität Darmstadt – Darmstadt, Germany
Interactive Graphics Systems Group
Scientific Leaders: Michael Goesele, Stefan Roth

Telecom ParisTech – Paris, France
Computer Graphics Group
Scientific Leader: Tamy Boubekeur

Istituto Scienza e Tecnologie dell’Informazione (ISTI) – Consiglio Nazionale delle Ricerche (CNR) – Pisa, Italy
Visual Computing Lab
Scientific Leader: Roberto Scopigno

Delft University of Technology – Delft, The Netherlands
Computer Graphics and Visualization Group
Scientific Leader: Elmar Eisemann

Contact

Technical University of Vienna (Project leader)
Michael Wimmer
Institute of Computer Graphics and Algorithms
Favoritenstrasse 9–11/186, A-1040 Vienna
P: +43 1 58801 18649
E: harvest4d-info@cg.tuwien.ac.at
https://www.harvest4d.org

Harvesting Dynamic 3D Worlds from Commodity Sensor Clouds

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Project context & objectives
The current acquisition pipeline for visual models of 3D worlds is time consuming and costly: The digital model of an artifact (an object, a building, an entire city) is produced by planning a specific scanning campaign, carefully selecting the acquisition devices, performing the onsite acquisition at the required resolution, and then post-processing the acquired data to produce a beautified triangulated and textured model.

However, in the future we will be faced with the ubiquitous availability of sensing devices that deliver different data streams that need to be processed and displayed in a new way, for example smartphones, commodity stereo cameras, cheap aerial data acquisition devices, etc.

We therefore propose a radical paradigm change in acquisition and processing technology: instead of a goal-driven acquisition, in which the position and type of devices and sensors to be used are determined ahead of the process, we let the available sensors (smartphones, stereo scanners, etc.) and resulting incoming data (photos, videos, GPS, ...) guide and optimize the acquisition process.

Project vision & expected results
Our vision is that the concept of incidental data capture will lead to a new methodology for 3D world acquisition. We aim at a proof of concept, supported by a prototype implementation, to demonstrate the viability of this approach by the end of this project.