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Computer Graphics

Persone

Didyk P. K.
Docente titolare del corso

Tariq T.
Assistente

Yurtsever M. A.
Assistente

Descrizione

The course starts with an introduction to basics concepts such as color, image, and camera. Next, students learn the raytracing technique, a fundamental method for simulating light. While getting familiar with the theory, the students gradually develop a raytracer that handles complex light effects, textures, and animations. The course also introduces rasterization, an alternative approach used for real-time applications. After learning concepts, students implement a simple rendering engine with techniques such as normal mapping and shadow maps. The course ends with an introduction to physics-based simulation and integrating cloth simulation into the rendering.

Obiettivi

This course introduces students to computer graphics, techniques for rendering, simulating, and animating virtual environments. The methods are essential for applications ranging from game and movie productions to scientific visualization and computer vision tasks.

Modalità di insegnamento

In presenza

Impostazione pedagogico-didattica

The course is a series of lectures interleaved with interactive classes. The assignments consist of both theoretical and practical assignments.

Modalità d'esame

The final grade is a result of the grades from the assignments and the final exam.

Bibliografia

Approfondimento

- Akenine-Möller, Tomas, Haines, Eric, Hoffman, Naty, Pesce, Angelo, Iwanicki, Michael, Hillaire, Sébastien. Real-time Rendering. A K Peters/CRC Press, 2018.
- Marschner, Steve, Shirley, Peter. Fundamentals of computer graphics. Fourth edition. Boca Raton: CRC Press, Taylor & Francis Group, 2016.

Offerta formativa

- **Bachelor of Science in Informatics**, Lezione, A scelta, 3° anno

Links

Facoltà di scienze informatiche

Informazioni

Semestre	**Autunnale**
Anno accademico	**2023-2024**
ECTS	**6**
Lingua	**Inglese**