Course content

This course emphasizes the integration of foundational knowledge, game engine technologies, and project-based learning to enhance students' software development skills.

Key topics covered include:

1. Basics of game art and the use of game engines such as Unity and Unreal Engine.
2. Techniques for 3D environment construction, lighting systems, and character animation.
3. Development of user interfaces, scripting technologies, particle systems, and physics systems.
4. Understanding game software architecture and performance analysis.
5. Mobile game development, VR/AR game technologies, and AI in games.

Course objectives

Knowledge

1. Acquire a foundational understanding of game development principles, design methodologies, and programming techniques.
2. Learn about state-of-the-art game engines and their applications in real-world scenarios.
3. Understand the components of game software architecture and the performance considerations in game systems.

Skills

1. Solve practical game development challenges using common algorithms and game engine technologies.
2. Design and implement systems for 2D and 3D games through classroom and project practice.
3. Combine game development knowledge with emerging technologies to create innovative and functional game programs.

Competencies

1. Collaborate effectively within a team to design and implement game projects.
2. Integrate technical and artistic elements into cohesive game development workflows.
3. Take responsibility for the development and optimization of specific game components, contributing to the success of a larger project.