

Introduction to videogames

Videogames Technology
Asignatura transversal

Departamento de Automática

Objectives

- Contextualize game development
- Introduce basic vocabulary

Bibliography

1. Desarrollo de Videojuegos, Arquitectura del Motor de Videojuegos. UCLM.

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Motivation

Why videogames?

- They involve all the Computer Science disciplines
- Exciting problems from an intellectual perspective
- Benchmark for AI
- Career opportunities
- They are fun!

Definition (I)

Vallejo

A videogame is a graphical application in real-time with an interaction between the user and the game

Real-time: **In this context**, it means the need of generating a frame rate

Interaction: Joystick, keyboard, mouse, body, ...

Definition (II)

Alternative definitions:

- A play activity with rules that involves conflict (I. Scheiber)
- A game has “ends and means”: an objective, an outcome, and a set of rules to get there (D. Parlett)
- A game is an activity involving player decisions, seeking objectives within a “limiting context” (i.e. rules) (C. Abt)

Game rule = game mechanic

Why a videogame is fun?

- Highly recommended reading: Raph Koster. A Theory of Fun. O'Really, 2nd edition. 2014.

Definition (III)

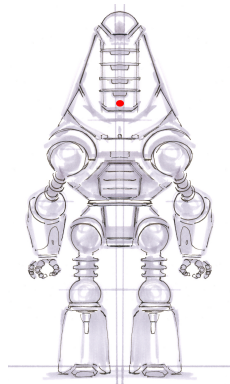
A personal perspective

Videogame = Video + game

Definition (IV)

Elements to take into account

- Story (Characters, goals, dialogs, etc)
- Graphics (3D models, animations, videos, etc)
- Sound (Music, sound effects, voice, etc)
- Logic (mechanics, programming, etc)
- Interface (HUD, user interface, etc)
- **Gameplay** and playability



Videogames development (I)

Topics involved in videogames development

- Personal computers
- Microprocessors development
- Peripherals (specific for videogames)
- 3D technology
- Internet
- Videogames engine development
- Physics engines
- Graphical engines
- Software engineering
- Artificial Intelligence (AI)

Videogames development (II)

Recent elements involved in videogames development:

- Human-machine interfaces
- Social networks
- Mobile technologies
- Tablets

Industry (I)

Industry involves

- Development, distribution, marketing and sales
- This involves software and hardware as well

Videogames generates more business than pictures and music

- 57,6 billion euros in 2009, 91 in 2016
 - 41 mobile gaming, 34 PCs, 19 free-to-play
- Average videogame cost: 7.4 - 9.7M €
 - Consolited franchises

Industry (II)

- PCs decrease as consoles increase sales
- From mid 80's consoles are the main platform
- Best revenues are in software
 - Hardware sold at a loss



Overview of Videogames

History

We can distinguish the following chronology

1. Videogames pre-history: Analogic hardware
2. 80's: 8 bit (Spectrum, Amstrad, ...)
3. 90's: 16 bit (Amiga, Atari, Game Boy, ...)
4. 2000 to now: High performance hardware

Check out these videos:

- (Video past)
- (Video future)
- (Video suggested)