A brief History of Videogames

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www.scaruffi.com/art/videogames.html

Unfortunately, this presentation seems to work only with Firefox and Internet Explorer.

Sources of images:
• mobygames.com
• webdesignerdepot.com
• the manufacturers
• ads in magazines
Prehistory

• 1962: Spacewar I

INSTRUCTIONS FOR PLAYING "SPACEMILI":

PLAYER 1:
A ... TURN LEFT
D ... TURN RIGHT
S ... THRUST
W ... FIRE

PLAYER 2:
J ... TURN LEFT OR 4 (NUMBER-PAD)
L ... TURN RIGHT OR 6
K ... THRUST OR 5
I ... FIRE OR 8

PRESS "LEFT" AND "RIGHT" TOGETHER FOR CLOAK/HYPERSPACE.

OR USE CONTROL BOXES ("GAMEPADS"), HYPERSPACE IS UP.
HIT TAB ON KEYBOARD TO SWAP CONTROL BOXES AND SHIPS.
Prehistory

- 1974: Jim Bowery’s Spasim for PLATO
- 1974: Greg Thompson’s Arpanet version of Maze Wars, precursor of virtual worlds
- 1974: John Daleske’s Empire III for PLATO
- 1976: Will Crowther’s Colossal Cave Adventure, the first computer adventure game
Arcade Era

- 1971: Nolan Bushnell's and Ted Dabney's "Computer Space"
- 1972: Atari’s Pong
Arcade Era

• 1978: Tomohiro Nishikado’s Space Invaders
• 1980: Toru Iwatani’s Pac-Man
• 1980: Ed Rotberg’s Battlezone
• 1981: Eugene Jarvis’ Defender
• 1981: Shigeru Miyamoto’s Donkey Kong
Arcade Era
Arcade Era

- 1982: Williams Electronics arcade games contain custom 16-color bitmap chips
- 1985: Commodore Amiga's custom graphics chip
Console Era

• 1972: Magnavox Odyssey, the first videogame console
• 1976: Fairchild's Video Entertainment System, first console based on a microprocessor
• 1977: Atari 2600
• 1979: Milton Bradley’s handheld Microvision
• 1980: Nintendo’s Gemu & Uotchi/ Game & Watch
Console Era

- 1983: Nintendo Famicom (later Nintendo Entertainment System)
- 1983: Crash of console market
- 1988: Sega Mega-Drive/Genesis
- 1989: Nintendo's handheld Game Boy
Game Design Era

- 1979: Activision, the first company to focus on game design
- 1982: Trip Hawkins founds Electronic Arts
- 1982: Enix founded in Japan
- 1982: George Lucas founds Lucasfilm Games
Game Design Era

- Malcolm Evans’ 3D Monster Maze (1981) for the Sinclair ZX81
- David Crane’s Pitfall! (1982) for the Atari 2600
- John O’Neill Lifespan (1983) for the Atari
- Jaron Lanier’s Moondust (1983) for the Commodore
Rogue games

1976: Will Crowther’s Colossal Cave Adventure (on a PDP-10)

1980: Michael Toy and Glenn Wichman's Rogue (on Unix)

1982: Jay Fenlason's Hack
Multi-player games

- 1983: Dan Bunten's M.U.L.E.
- 1985: Island of Kesmai
MUD Era


• 1986: Randy Farmer and Chip Morningstar’s online virtual-reality game “Habitat” with “avatars”: a virtual community
Optical Media era

- 1985: The CD-ROM
- The Intel 80386 microprocessor
- 1987: PC Engine/ TurboGrafx-16
- 3D graphics
Composite Era

- Composite game: a player can use the mechanics from one genre to solve the challenges from another genre
- 1985: Super Mario Brothers
- 1985: Ghosts and Goblins
Role-playing games

- 1986: Yuji Horii’s Dragon Quest
- 1986: Shigeru Miyamoto’s Legend of Zelda
- 1987: NetHack (created by Boston highschoolers Jay Fenlason, Kenny Woodland, Mike Thome, Jonathan Payne)
- 1989: Phantasy Star II
Open-world (sandbox) games

- 1981: Ultima
- 1984: Elite
- 1985: Ultima IV
- 1985: Mercenary: Escape from Targ
Open-world Games

- Shigeru Miyamoto’s Legend of Zelda (1986)
- Yuji Horii’s Dragon Quest (1986)
- Turbo Esprit (1986)
- Metroid (1986)
- Vette (1989)
- Mike Singleton's Midwinter (1989)
Simulation games

- 1982: Don Daglow’s Utopia, a city-building game
- 1989: Will Wright's SimCity, a city-building game
- 1989: Peter Molyneaux's Populous, first “god game”
Strategy Games

- 1981: Eastern Front
- 1982: Chris Crawford's Legionnaire
- 1989: Herzog Zwei, the first real-time strategy game
Stealth Games

- 005 (1981)
- Castle Wolfenstein (1981)
- Metal Gear (1987)
Puzzle Games

- 1978: Jim Huether’s Flag Capture
- 1984: Alexey Pajitnov's Tetris
Troll Games

- 1986: Super Mario Bros - The Lost Levels
- 1986: Takeshi's Challenge
First-person shooters

- David Smith's first-person shooter The Colony (1988) with real-time rendering
Text Adventure Games

- 1976: Will Crowther's Colossal Cave Adventure, the first computer adventure game
- 1988: Richard Skrenta's Monster, a MUD that allows players to build the game world for other players to explore
- 1989: Jim Aspnes' TinyMUD, a "social" MUD derived from Monster (it allows players to create a game world for other players to explore) and the archetype of MUSH (Multi-User Shared Hallucination)
The Console Wars

- 1989: Sega releases the Mega Drive/Genesis
- 1990: SNK’s Neo-Geo
- 1990: Nintendo owns a 95% market share
- 1991: Sonic the Hedgehog is the first Sega best-seller
- 1992: Sega Model 1 board pioneers polygonal 3D graphics
Virtual Reality

• 1985: Jaron Lanier founds VPL
• 1989: Nintendo’s Power Glove, a wearable three-dimensional input device.
• 1990: Fakespace founded for virtual reality devices
• 1990: Scott Fisher founds Telepresence Research
• 1990: W Industries’ Virtuality system
Virtual Reality

• 1991: Virtual Research Systems’ "Flight Helmet"
• 1994: Ron Britvich's virtual world AlphaWorld
• 1993: Sega demonstrates the Sega VR in 1993
• 1995: Future Vision Technologies’ head-mounted display for the consumer market, the Stuntmaster
• 1995: The iGlasses goggles
1990

- Creative Labs’ Soundblaster Pro
- Nintendo’s Super Nintendo Entertainment System
- Simutronics’ GemStone III, a graphical MUD that spreads on CompuServe, Prodigy and America OnLine
- Pavel Curtis’ LambdaMOO, the first MOO (object-oriented MUD), created at Xerox PARC
1990

- The Secret of Monkey Island
- Wing Commander
- Super Mario World
- Final Fantasy III
- Commander Keen
- Microsoft Minesweeper
1991

- S3 Graphics’ S3 86C911, the first graphics accelerator card
- id Software is founded
- World Wide Web
- Seiken Densetsu/ Final Fantasy/ Mystic Quest
- Sonic the Hedgehog
1991

- Sid Meier’s strategy game Civilization
- Puzzle game Lemmings
- Road Rash
- Hunter, open world
1991

- The Legend of Zelda - A Link to the Past
- Neverwinter Nights
- Fighting game Street Fighter II - The World Warrior
- Another World
1992

- Silicon Graphics’s cross-platform application programming interface OpenGL
- Virtua Racing with 3D graphics
1992

- Super Mario Kart
- Mortal Kombat
- First-person shooter game Wolfenstein 3D
- Real-time strategy game Dune 2
1993

- Myst (Rand Miller), “artistic” videogame
- Star Fox (Shigeru Miyamoto)
1993

- Sim City 2000
- First-person shooter Doom
- Virtua Fighter, with 3D graphics
- Master of Orion
1994

- The Sony Playstation
- The Sega Saturn
- Shigesato Itoi’s role-playing game Mother/Earthbound
1994

- Heretic
- Warcraft Orcs & Humans, real-time strategy game
- Tekken
- Super Metroid
1995

- Nintendo's Virtual Boy console
- The first E3 is held in Las Vegas
- Microsoft’s gaming platform DirectX
- Intel’s ATX motherboard
- Distribution service Newgrounds
- The Sony DVD goes on sale
1995

- Warcraft II
- Need for Speed
- Command and Conquer
- Rayman
1995

- Penn & Teller’s Smoke and Mirrors, that contains the troll game Desert Bus
- Jim Bumgardner’s “The Palace”, a virtual world
1996

- Gabe Newell and Mike Harrington found Valve
- Nintendo 64, the first true 64 bit game console
- 3D accelerators: 3dfx’s Voodoo Graphics, Rendition's V1000, Array Technology’s 3D RAGE
- 3D games: open-world Super Mario 64, Tomb Raider (Lara Croft debuts in Tomb Raider)
1996

- Bruce Damer's virtual-reality environments
- Yasuhiro Wada’s Bokujō Monogatari/ Harvest Moon life simulator
- The MMORPG: "Baramue Nara/ Baram“ and "Meridian 59“ (cowritten/participatory nature)
1996

- Pokémon/ Pocket Monsters Red and Green
- Quake (3D) by id Software
- Duke Nukem 3D
- MAX
1996

- Shinji Mikami's “survival horror” game, Biohazard/ Resident Evil
- Naughty Dog’s Crash Bandicoot
1996

- Arcade game Metal Slug
- Arcade game House of the Dead
1997

- Intel introduces MMX chips
- The Cyberathlete Professional League, the world's first videogame sports league
- Nicola Salmoria's arcade-game emulator MAME (Multiple Arcade Machine Emulator) to preserve gaming history
1997

- Richard Garriott & Ralph Koster: "Ultima Online", the first MMORPG and a socio-economic experiment
- Final Fantasy VII, a role-playing game produced with a budget of $45 million
- Carmageddon
- Tekken 3
- Gran Turismo
1997

- Grand Theft Auto, open-world game
- Total Annihilation, real-time strategy game
- Oddworld - Abe's Oddysee
1997

- Age of Empires
- Quake 2
- Diablo
1998

• Sales of videogame consoles in the USA alone amounts to $6.2 billion, which dwarfs sales of videogame software on personal computers ($1.8 billion)
  – Nintendo Game Boy Color
  – Nintendo 64
  – Sony PlayStation
  – Sega Saturn
1998

- Gabe Newell & Marc Laidlaw’s first-person shooter Half Life
- Metal Gear Solid (stealth game, complex story-telling)
- Osamu Sato’s psychedelic game LSD Dream Emulator
1998

- Soulcalibur allows the player to move in 8 directions
- Thief: stealth videogame
1998

- Flight Simulator 98
- Starcraft, real-time strategy game
- Unreal
- The Legend of Zelda - Ocarina of Time
- Spyro the Dragon
1999

- Sega Dreamcast console
- Nvidia’s GPU (graphics processor unit) GeForce 256
- Lee Seungchan's QuizQuiz released for free (published by South Korea's Nexon), the first "free-to-play" (F2P) game ("freemium")
1999

- Real-time strategy game *Homeworld*
- *Planescape Torment*
- Survival horror game *Silent Hill*
- *Yu Suzuki's open-world game Shenmue*
1999

- Brad McQuaid & Steve Clover: EverQuest (second MMORPG) introduces "Dragon kill points" (DKPs), rewards for players who join together to defeat dragons (points, not currency, but treated like currency)
1999

- Heroes of Might and Magic III
- Driver, open world
- Masaya Matsuura’s Vib-Ribbon, rhythm game
- System Shock 2
2000

- Sony Playstation 2
- Aapo Kyrola and Sampo Karjalainen launch the virtual world Hotelli Kultakala/ Habbo Hotel
2000

- Will Wright's life-simulation game, The Sims
- Counter Strike
- Tony Hawk's Pro Skater 2
- Deus Ex, open world
2001

- Microsoft Xbox
- Fumito Ueda's Ico
- BotFighters (Sweden), first location-based game
2001

- Max Payne
- Return to Castle Wolfenstein
- Halo
- Empire Earth
2001

- Silent Hill 2, survival horror
- Grand Theft Auto 3, open world
- Peter Molyneux’s god game Black & White
- Gothic, role-playing game
2001

- Phoenix Wright - Ace Attorney
- Devil May Cry, “hack and slash”
- Animal Forest/ Animal Crossing, life simulation
Alternative Reality Games

• Elan Lee’s “The Beast” (2001)
• Jane McGonigal’s “I Love Bees” (2004)
2002

- Mafia
- Diablo II - Lord of destruction
- Neverwinter Nights
- Metroid Prime
- MMORPG The Sims Online, almost a metaverse
2002

- Splinter Cell
- Dungeon Siege
- Battlefield 1942
- Baldur’s Gate – Dark Alliance
2002

- The Elder Scrolls III: Morrowind, open world
- Gothic II, role-playing game
- Warcraft III
2003

- Nokia’s console / mobile phone hybrid N-Gage
- Valve’s digital distribution services Steam
- Ubi Soft Entertainment
- Riccardo Zacconi co-founds King
2003

- The MMORPG EVE Online
- Keita Takahashi ‘s “Katamari Damacy”
- Sylvia Eckermann & Mathias Fuchs’ "fluID“
- Defense of the Ancients (Warcraft 3 modification)
2003

- Virtual reality worlds "Second Life" (by Philip Rosedale) and "Gaia Online"
- "Second Life" in 2008: 50,000 concurrent users at any given time
2003

- Call of Duty
- Prince of Persia
- Max Payne 2
- Rise of Nations
- WarioWare
2003

- Brad King and John Borland: "Dungeons And Dreamers - The Rise of Computer Game Culture from Geek to Chic" (2003)
2004

- Nintendo DS dual-screen console
- The first Major League Gaming for computer gaming is held in New York
- Facebook
- Telltale Games (episodic gaming)
- Tencent’s first game, QQ Tang (a copy of Nexon’s BNB/Crazy Arcade)
2004

- Rob Pardo’s MMORPG World of Warcraft
- Far Cry
- Garry Newman’s open-world game Garry's Mod/Gmod
- Kikiyama's surrealistic game Yume Nikki
2004

- Doom 3
- Half Life 2
- Halo 2
- Rome: Total War
2005

- Microsoft’s high-definition XBox 360
- Sony Playstation Portable
- Turner Broadcasting System’s online game service GameTap
2005

- Medal of Honor – European Assault
- F.E.A.R.
- Age of Empires 3
- Guitar Hero
- Nintendogs
- Need for Speed Most Wanted
2005

• Michael Mateas and Andrew Stern’s Artificial Intelligence-based Façade
• Fumito Ueda’s Shadow of the Colossus
• Toshio Iwai's music-generator Electroplankton
2005

- Resident Evil 4
- Goichi Suda's Killer 7
2006

- The Blu-ray disc
- Nintendo’s motion-sensitive Wii
2006

- The Godfather
- Gears of War
- The Legend of Zelda - Twilight Princess
- Elder Scrolls IV – Oblivion: open world
- Hitman Blood Money
2006

- Prey
- Heroes of Might and Magic V
- Titan Quest
- Dwarf Fortress, open-ended
- Bully
2007

- Mark Pincus founds Zynga
- First-person shooter Team Fortress 2 with meta-games and virtual economy
• Halo 3
• Super Mario Galaxy
• Crysis
• Call of Duty IV – Modern Warfare
• Unreal Tournament 3
2007

- Unreal Tournament 3
- The Witcher
- Puzzle-game Portal
- Bioshock
2007

- Open-world games
  - Crackdown
  - S.T.A.L.K.E.R.: Shadow of Chernobyl
  - Ubisoft's Assassin's Creed
2007

- Troll games
  - I Wanna Be The Guy
  - The Big Adventure of Owata’s Life
2008

- Good Old Games (GOG) distribution service to release classic games without DRM
- Social Gaming Network (SGN) is founded to develop social games for the Facebook platform
2008

- Browser-based “social games” running on Facebook:
  - YoVille
  - David Maestri’s Mob Wars
- World of Warcraft is the most popular massively multiplayer online (MMO) game
2008

Boom of indie games
- Jonathan Blow’s "Braid“, an artistic videogame
- 2d Boy’s puzzle-game World Of Goo
2008

- Grand Theft Auto IV
- Prince of Persia
- Metal Gear Solid 4
- Burnout Paradise, open world
2008

- Command and Conquer 3 Kane’s Wrath
- Fallout 3
- Spore
2009

- Facebook-based social games: Farm Town and Zynga’s FarmVille
- Multiplayer online battle arena League of Legends
- Activision sells 4.7 million copies of “Call of Duty - Modern Warfare 2” on its first day
2009

- F.E.A.R. 2
- Alan Wake
- Starcraft 2 Terrans: Wings of Liberty
- Hidetaka Miyazaki's Demon's Souls: ethical videogame
2010

- Microsoft's Kinect, a motion sensing input device for the Xbox
- Digital distribution service Desura
- Activision sells 5.6 million copies of “Call of Duty - Black Ops” on its first day
2010

- Angry Birds, the first blockbuster of iPhone videogaming
- Booyah's location-based "My Town"
- Playdead's dialogue-less Limbo
2010

- Heavy Rain
- Super Mario Galaxy 2
- Mass Effect 2
- Amnesia The Dark Descent
2010

- Open-world
  - Red Dead Redemption
  - Mount & Blade: Warband
  - Just Cause 2
2011

- Justin Kan founds Twitch.tv
- Game-streaming service OnLive
- Revenues from F2P games overtake revenues from premium games on mobile devices
2011

- Davey Wreden’s post-modern videogame The Stanley Parable
- Skylanders Spyro's Adventure, the first augmented-reality hit
- Puzzle game Candy Crush Saga
2011

- Portal 2
- Bastion
- Kerbal Space Program
- Dark Souls
2011

- Open-world
  - Markus Persson’s Minecraft, the first hit of indie games (players can interact with and modify a 3D environment)
  - The Elder Scrolls V: Skyrim
Indie Games

- 2010: Super Meat Boy
- 2011: Jamestown
- 2012: Defender’s Quest
2012

- Hotline Miami
- Dear Esther
- Xenoblade Chronicles
- Spelunky
2012

- Nicklas Nygren’s freeware Knytt Underground
- FTL: Faster Than Light (Kickstarter-funded)
- Supercell Oy's "Clash of Clans", a F2P
- Euro Truck Simulator 2, open world
2012

- Spec Ops - The Line
- Walking Dead
- Journey
- XCOM: Enemy Unknown
- Puzzle-game FEZ
2013

- Sony's PlayStation 4
- Microsoft's Xbox One
- Julie Uhrman’s OUYA, an Android microconsole funded via Kickstarter
2013

- Naughty Dog’s The Last of Us (ethical videogame)
- Gone Home
- BioShock Infinite
- IceFrog's multiplayer online game Dota 2 (published by Valve)
2013

- Alexander Bruce's puzzle game Antichamber
- Don't Starve
- Lucas Pope's Papers Please
2013

- Dean Hall’s Arma 2 modification DayZ, multiplayer open-world survival third-person shooter
- Arma 3
2013

- Open-world
  - Grand Theft Auto V
2014

• Amazon acquires gaming studio Double Helix Games and live streaming video platform Twitch
• Nintendo's worst year - emergence of mobile gaming
• #Gamergate: shame on videogames (attacks on Zoë, Brianna Wu, well Anita Sarkeesian)
2014

- Aviator
- 80 Days
- Persona Q: Shadow of the Labyrinth
- Bayonetta 2
2014

- Middle-Earth: Shadow Of Mordor
- The Vanishing of Ethan Carter
2014

- Open-world
  - Subnautica
  - Elite: Dangerous
2015

• Nvidia's game streaming service Grid/ GeForce Now
• Sony’s game streaming service PlayStation Now/ PS Now
• Nvidia’s Shield console
• Gaming's top 25 public companies generate revenues of $54 billion
2015

- Sunless Sea
- Prune
- JustCause 3
- Shaban Shaame’s Spells of Genesis, the first blockchain game
2015

Peak of open-world games
• The Witcher 3: Wild Hunt
• Mad Max
• Westerado: Double Barreled
Peak of open-world games

- Fallout 4
- Sunless Sea
- Metal Gear Solid V - The Phantom Pain
2015

- Toby Fox's Undertale
- Davey Wreden’s post-modern game The Beginner's Guide
- Bloodborne
- MidBoss' 2064 Read Only Memories
2016

- Facebook/ Oculus Rift
- Niantic’s augmented-reality Pokemon Go
2016

Virtual-reality games
• Fantastic Contraption
• Job Simulator.
2016

- Sean Murray’s self-generating universe No Man's Sky
- Starbound
- Firewatch
- Forza Horizon 3, open world
- Dialogue-less Inside
2016

- Eric Barone’s Stardew Valley
- Superhot
- Final Fantasy XV
- Hitman
- Hiroyoshi Oshiba's Trap Adventure 2, troll game
2016

- Overwatch
- Titanfall 2
- Doom
- Dragon Quest Builders
- Uncharted 4: A Thief's End
2016

- Jonathan Blow's puzzle game
  The Witness
- Tharsis
- Thumper
BEST SELLING VIDEO GAME SUPER GENRES OF 2016 BY UNITS SOLD

- 27.5% Shooter
- 22.5% Action
- 11.7% Sports
- 12.9% Role-Playing
- 7.8% Adventure
- 5.8% Fighting
- 4.3% Strategy
- 4.1% All Other
- 3.3% Racing

Source: The NPD Group/Retail Tracking Service/Digital Games Trackins Servi

AVERAGE GAMERS BY AGE GROUP

**Male**
- Under 18 years old: 18%
- 18-35: 17%
- 36-49: 11%
- Age 50+: 13%

**Female**
- Under 18 years old: 11%
- 18-35: 10%
- 36-49: 8%
- Age 50+: 13%
2017

- Nintendo's Switch console (a "hybrid" device)
2017

- Fortnite (Epic Games)
- The Legend of Zelda: Breath of the Wild
- NieR:Automata
- Persona 5
2017

- Night in the Woods
- Gorogoa
- Cuphead
- Divinity: Original Sin 2
- Hellblade: Senua's Sacrifice
2017

- What Remains of Edith Finch
- Super Mario Odyssey
- Resident Evil 7: Biohazard
- Yakuza 0
- Hollow Knight
2017

Virtual-Reality games
- Virtual Virtual Reality, a VR game about VR and AI
- Accounting+
- Space Pirate Trainer
2018

Virtual-Reality games

- Beat Saber

Metaverse

- Camp Mobile's Zepeto (South Korea), a social platform where users interact and create content as 3D avatars
2018

- Google's videogame streaming service Project Stream
Metaverses/cryptoworlds

- 2006 Roblox (Bay Area)
- 2007 Solipsis (France)
- 2014 The Sandbox (Britain)
- 2015 Decentraland (Argentina)
- 2015 Cryptovoxels (New Zealand)
- 2017 Epic Games' Fortnite
- 2017 Somnium Space (Britain)
- 2018 Upland (Silicon Valley)
NFT-based games

- 2018 AxieInfinity (Singapore)
- 2018 Zed Run (Australia)
2018

- ... in progress...
- Kingdom Come: Deliverance, open world
- Red Dead Redemption II
- Lucas Pope's Return to the Obra Dinn
2019

- ... in progress...
- Baba is You
2020

• … in progress…
• Microsoft Flight Simulator
• Half-Life – Alyx
• Animal Crossing: New Horizons, networked virtual worlds
2021

- ... in progress...
(nominated for future inclusion)

1980 Centipede  
1985 Koronis Rift  
1986 Out Run  
1987 Pirates  
1989 Prince of Persia  
1992 Darklands  
1993 The 7th Guest  
1994 Magic Carpet  
1994 System Shock  
1996 Creatures  
2005 God of War  
2006 Okami  
2008 Little Big Planet  
2009 Flower  
2013 Flappy Bird  
2017 Little Nightmares  
2017 Sonic Mania  
2017 Rain World  
2018 God of War  
2018 Spider-Man  
2018 Super Smash Bros Ultimate  
2018 Celeste  
2018 A Way Out  
2018 Among Us  
2019 Sekiro - Shadows Die Twice  
2019 Control  
2019 Resident Evil 2  
2019 Death Stranding  
2019 Disco Elysium  
2019 Tetris 99
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