High-end sim racing industry

A kickstart guide

Sim racing highlights

**Gaming Simulator Market
2020 — 2027**

4.49 to 9.99

billion USD

*Grand View Research, 2019

**Search interest
in five years**

+376 %

Google searches

*Google Trends, 2023

**/r/simracing has grown into the
2023**

top 1%

of the largest communities

* reddit.com/best/communities

Sim racing

What is sim racing?

What is it like to race against the world's best drivers on some of the most iconic tracks in the world? Without ever leaving your home? Sim racing makes it possible.
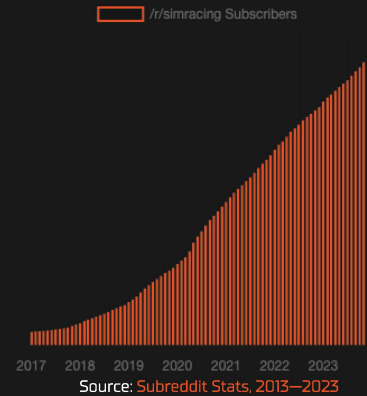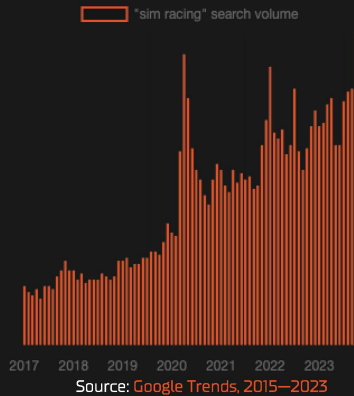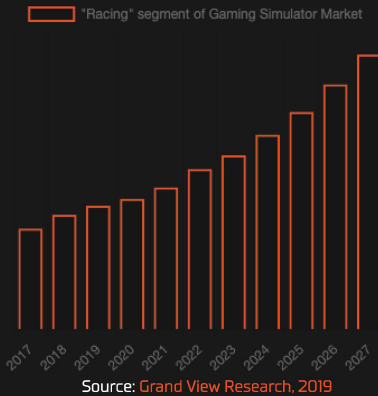
Sim racing is virtual race car driving, digital motorsports, accessible to almost everyone. It's a fast-growing sport with a passionate fan base of millions around the world. And it's only getting bigger.

Direction

COVID-19 played a significant role in the growth and popularity of the sim racing industry. With real-world motorsport events cancelled or postponed, sim racing provided a way for fans and drivers to get their racing fixes.

Sim racing gained legitimacy as real-world motorsport organizations began to embrace it. This included the creation of official virtual racing series and the participation of real-world drivers in sim racing events. With the growing popularity of esports, the sim racing industry saw a significant increase in investment and increased recognition of its potential as a business.

"Racing" segment of Gaming Simulator Market

2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027

Source: Grand View Research, 2019

"sim racing" search volume

2017 2018 2019 2020 2021 2022 2023

Source: Google Trends, 2015—2023

/r/simracing Subscribers

2017 2018 2019 2020 2021 2022 2023

Source: Subreddit Stats, 2013—2023

High-end sim racing

What makes it high-end?

High-end sim racing is about using cutting-edge hardware and software to achieve maximal immersion and feedback from the car and track.

1

Excellent technology

Force feedback steering wheels, motion platforms and immersive lighting, designed to give you the feeling of actually driving a real car. High-end sim racing rigs can cost thousands to tens-of-thousands of dollars. But you drive (and crash) cars 10 or 100 times more expensive than your rig.
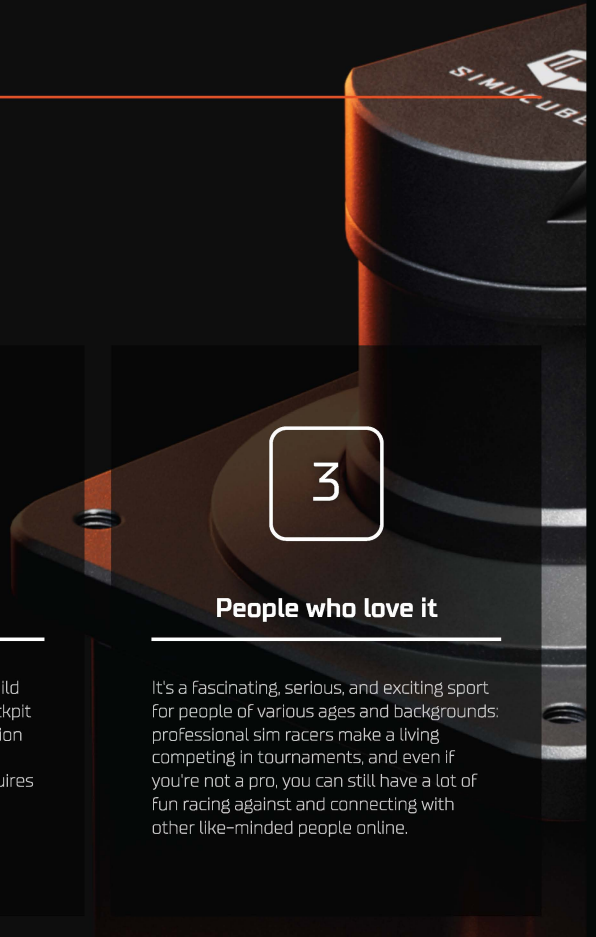
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Constant evolvement

Many high-end sim racers gradually build their sim racing station — a chassis, cockpit or rig — to get the best level of immersion and feedback as possible through high fidelity cutting-edge technology. It requires passion and dedication.
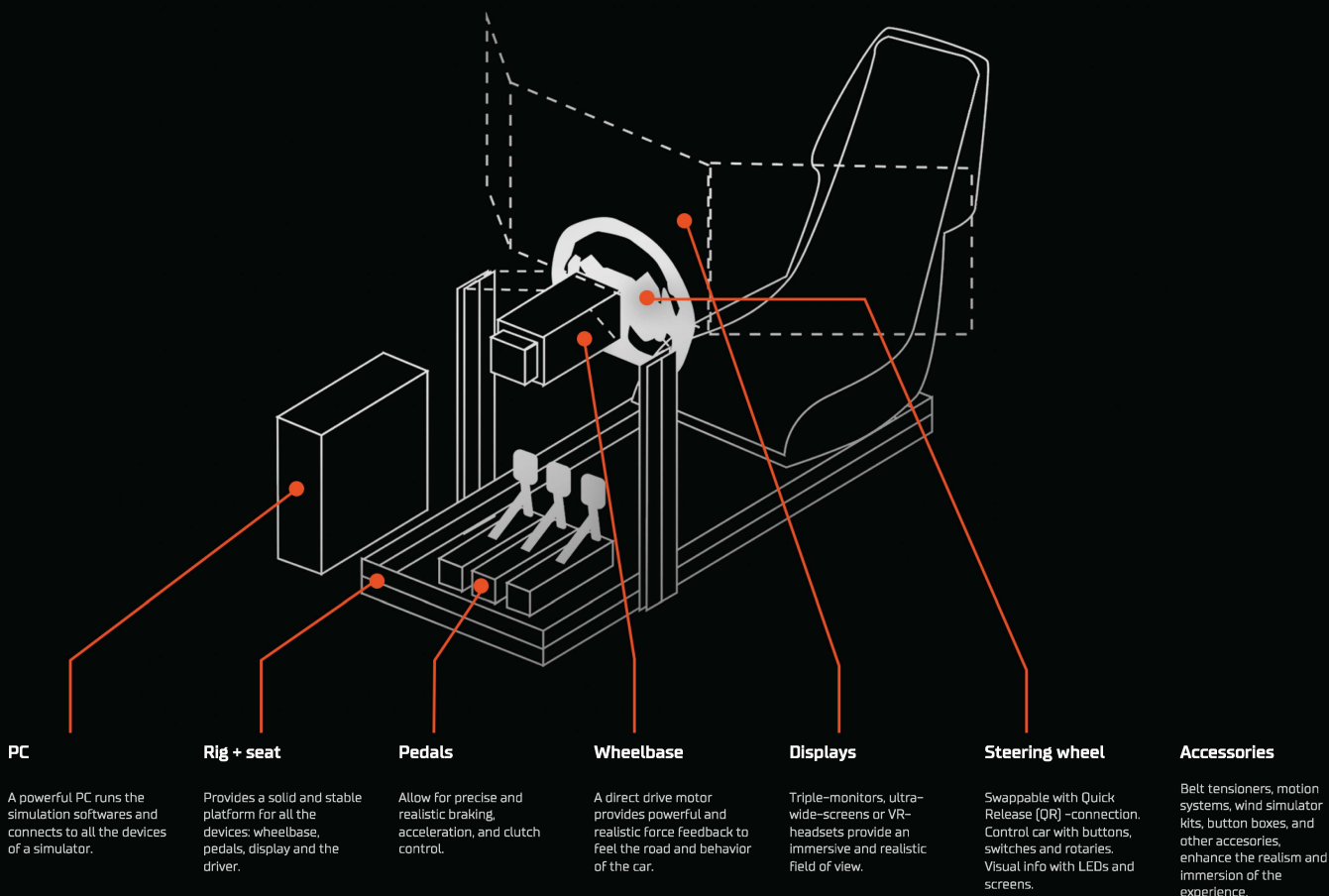
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People who love it

It's a fascinating, serious, and exciting sport for people of various ages and backgrounds: professional sim racers make a living competing in tournaments, and even if you're not a pro, you can still have a lot of fun racing against and connecting with other like-minded people online.

Inside the simulator

What does a sim racing rig consist of?

PC

A powerful PC runs the simulation softwares and connects to all the devices of a simulator.

Rig + seat

Provides a solid and stable platform for all the devices: wheelbase, pedals, display and the driver.

Pedals

Allow for precise and realistic braking, acceleration, and clutch control.

Wheelbase

A direct drive motor provides powerful and realistic force feedback to feel the road and behavior of the car.

Displays

Triple-monitors, ultra-wide-screens or VR-headsets provide an immersive and realistic field of view.

Steering wheel

Swappable with Quick Release (QR) –connection. Control car with buttons, switches and rotaries. Visual info with LEDs and screens.

Accessories

Belt tensioners, motion systems, wind simulator kits, button boxes, and other accesories, enhance the realism and immersion of the experience.

It's not a game, it's a sim

What are simulation games vs. arcade games?

In high-end sim racing, the "games" are often referred to as simulators. Sim racers make this classification based on how realistic the behavior of cars and track physics are in the game.

With high-end sim racing devices you need pure simulators to unleash the full extent of the hardware. It still doesn't restrict you from taking arcade spins every now and then.

What do they drive?

1   iRacing
2   Assetto Corsa Competizione
3   Assetto Corsa
4   rFactor 2
5   Automobilista 2
6   Dirt Rally 2.0
7   Forza Motorsport
8   F1 2022
9   Richard Burns Rally
10 Raceroom Racing Experience

Source: **Simucube True Drive Paddock data, 2023**

The jargon

8020 aluminum profile
Modular framing system made from aluminum. It's popular in sim racing for building sturdy, adjustable frames for racing simulators because of its strength and flexibility in design.

Direct Drive
Steering system in sim racing where the wheel is directly connected to a powerful motor. It provides realistic and strong force feedback, giving drivers a more immersive and accurate driving experience.

Force Feedback (FFB)
Technology in sim racing that transfers the physical sensations in a real car from a game (software) to the hardware. It provides real-time responses to factors like road texture, grip, and the car's handling, enhancing the realism of the simulation.

Haptics
Technology that recreates the sense of touch by applying forces, vibrations, or motions to the user. In sim racing, haptic devices help simulate the feeling of various driving conditions, like the texture of the road or the impact of collisions.

Motion
Simulator devices or platforms that can move in various directions to mimic the physical sensations of driving, like acceleration, turning, and road bumps. It adds to the realism and immersion of the racing experience.

Quick Release
Mechanism that allows for fast and easy removal or attachment of a steering wheel to a racing simulator. This is useful for sim racers who want to switch between different types of wheels for different racing experiences or for easy storage.

Telemetry
Data that's collected about the performance of a car during a race, like speed, tire temperature, and engine performance. In sim racing, telemetry is used to analyze and improve driving techniques and to make more realistic simulations.

Brands

Who make it happen?

Here are some high-end sim racing brands you should know.

Advanced Sim Racing

Ascher Racing

Cube Controls

D-BOX Technologies

GSI Gomez Sim Industries

Heusinkveld
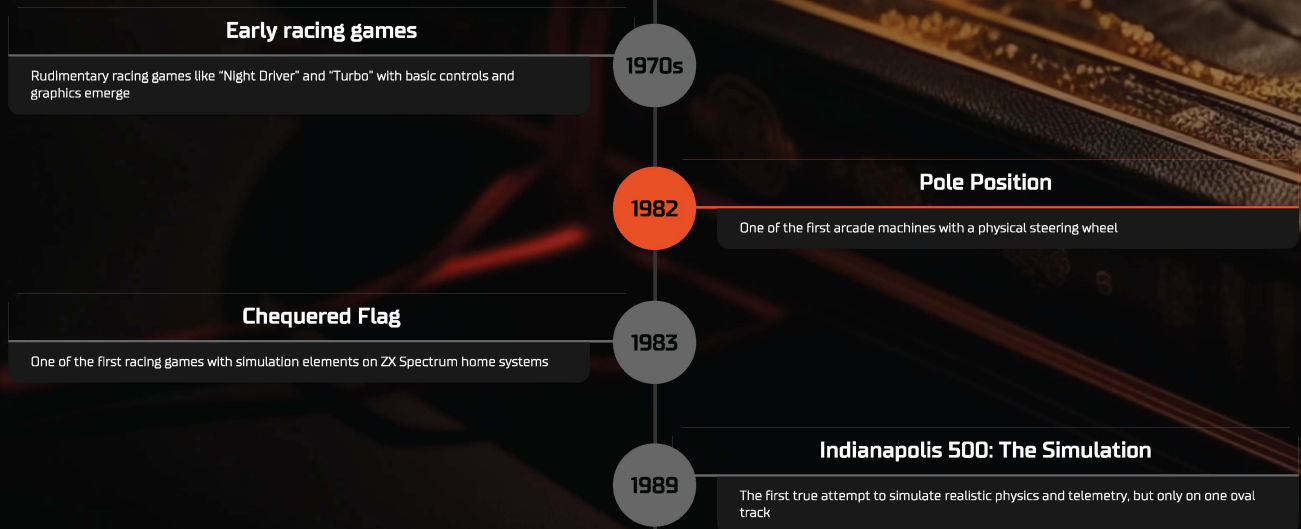
Precision Sim Engineering

Sim-Lab

Simucube

Timeline

Where did high-end sim racing come from?

While it is difficult to compile decades of development into one timeline, here is a quick overview to provide some context for pivotal events that contributed to the evolution of the high-end sim racing industry.

Early racing games

Rudimentary racing games like "Night Driver" and "Turbo" with basic controls and graphics emerge

1970s

1982

Pole Position

One of the first arcade machines with a physical steering wheel

Chequered Flag

One of the first racing games with simulation elements on ZX Spectrum home systems

1983

1989

Indianapolis 500: The Simulation

The first true attempt to simulate realistic physics and telemetry, but only on one oval track

Formula One Grand Prix/World Circuit

1992

More realistic race discipline, tracks and leagues, and the first occurrence of drafting/slip streaming

Thrustmaster Formula T1

1994

First pivotal racing wheel for the PC mass market — yet without force-feedback

Gran Turismo

1997

Offering home consumers an extensive selection of cars, along with detailed tuning and customization options

Force-feedback wheels

1997

Microsoft Sidewinder Force Feedback Wheel & Logitech Wingman Formula Force deliver immersive force-feedback to consumers for the first time

Richard Burns Rally

2004

First revolutionary, realistic and challenging physics engine

iRacing

2008

The sim racing software for PC launches with centralized racing and competition service, offering online racing on virtual tracks all around the world

Rise of esports

2010s

Online streaming platforms enhance the popularity of sim racing, turning it into a professional sport

Direct Drive controller

2013

Granite Devices creates the Argon controller, a key component in the development of direct drive systems for sim racing wheels

Assetto Corsa

2013

Another pivotal sim racing software is released in Steam Early Access

Direct Drive system

2014

Leo Bodnar introduces a working Direct Drive system

Consumer Direct Drives

2019

Simucube and Fanatec release the first consumer grade high-end Direct Drive wheelbases

Force-feedback pedals

2022

Simucube releases the world's first active force feedback sim racing pedal

Tribe

Where are the people?

reddit.com/r/simracing
323000 users — Discussion, hot topics, opinions and news about the latest developments in sim racing, including a lot of discussion about high-end sim racing.

High End SimRacing Enthusiasts
14500 users — A group for sim racers who share a genuine passion for high-end sim racing products, whether they already own top-notch gear, are looking to upgrade, or simply want to showcase their pride and joy—regardless of the brand or whether it's self-made.

High End Simulator Owners Group – Official
5200 users — The first and original high-end group for those who simrace using gloves and racing shoes, whose rig costs more than their car, who hide the amount they spend on their rig from their spouses, and who secretly arrange pick up meetings with their courier drivers.

Simucube Discord
4500 users — A direct and fast communication channel for many high-end enthusiasts and Team Simucube: discussions, tips, tricks and information sharing.

Granite Devices Forum
Over 62000 messages — Passionate, detailed and sometimes very technical details about sim racing technology and hardware.

SIMUCUBE

This kickstarter package was compiled by Simucube to spread information about the high-end sim racing industry. For detailed insights, industry trends, and our latest innovations, visit simucube.com. Join our Discord-community of enthusiasts and experts dedicated to pushing the boundaries of simulation racing. Your journey to excellence starts there.