The **Google Self-Driving Car**, commonly abbreviated as SDC, is a project by [Google X](https://en.wikipedia.org/wiki/Google_X) that involves developing technology for [autonomous cars](https://en.wikipedia.org/wiki/Autonomous_car), mainly [electric cars](https://en.wikipedia.org/wiki/Electric_vehicle). The software powering Google's cars is called Google Chauffeur.[[1]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-1) Lettering on the side of each car identifies it as a "self-driving car". The project is currently being led by Google engineer [Sebastian Thrun](https://en.wikipedia.org/wiki/Sebastian_Thrun), former director of the [Stanford Artificial Intelligence Laboratory](https://en.wikipedia.org/wiki/Stanford_Artificial_Intelligence_Laboratory) and co-inventor of [Google Street View](https://en.wikipedia.org/wiki/Google_Street_View). Thrun's team at Stanford created the robotic vehicle [Stanley](https://en.wikipedia.org/wiki/Stanley_(vehicle)) which won the [2005 DARPA Grand Challenge](https://en.wikipedia.org/wiki/2005_DARPA_Grand_Challenge) and its US$2 million prize from the [United States Department of Defense](https://en.wikipedia.org/wiki/United_States_Department_of_Defense).[[2]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-NYT2010-2) The team developing the system consisted of 15 engineers working for Google, including Chris Urmson, Mike Montemerlo, and Anthony Levandowski who had worked on the [DARPA Grand and Urban Challenges](https://en.wikipedia.org/wiki/DARPA_Grand_Challenge).[[3]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-Google-3)

[Legislation](https://en.wikipedia.org/wiki/Autonomous_car#Legislation) has been passed in four U.S. states and [Washington, D.C.](https://en.wikipedia.org/wiki/Washington,_D.C.) allowing driverless cars. The state of [Nevada](https://en.wikipedia.org/wiki/Nevada) passed a law on June 29, 2011, permitting the operation of autonomous cars in Nevada, after Google had been lobbying in that state for robotic car laws.[[4]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-Forbes0611-4)[[5]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-NYT0511-5) The Nevada law went into effect on March 1, 2012, and the [Nevada Department of Motor Vehicles](https://en.wikipedia.org/wiki/Nevada_Department_of_Motor_Vehicles) issued the first license for an autonomous car in May 2012, to a [Toyota Prius](https://en.wikipedia.org/wiki/Toyota_Prius) modified with Google's experimental driverless technology.[[6]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-1stLicense-6) In April 2012, [Florida](https://en.wikipedia.org/wiki/Florida) became the second state to allow the testing of autonomous cars on public roads,[[7]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-7) and [California](https://en.wikipedia.org/wiki/California) became the third when Governor [Jerry Brown](https://en.wikipedia.org/wiki/Jerry_Brown) signed the bill into law at Google HQ in [Mountain View](https://en.wikipedia.org/wiki/Mountain_View,_California).[[8]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-8) In December 2013, [Michigan](https://en.wikipedia.org/wiki/Michigan) became the fourth state to allow testing of driverless cars on public roads.[[9]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-9) In July 2014, the city of [Coeur d'Alene, Idaho](https://en.wikipedia.org/wiki/Coeur_d%27Alene,_Idaho) adopted a robotics ordinance that includes provisions to allow for self-driving cars.[[10]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-10)

In May 2014, Google presented a new concept for their driverless car that had neither a steering wheel nor pedals,[[11]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-11) and unveiled a fully functioning prototype in December of that year that they planned to test on [San Francisco Bay Area](https://en.wikipedia.org/wiki/San_Francisco_Bay_Area) roads beginning in 2015.[[12]](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-12) Google plans to make these cars available to the public in 2020.[[](https://en.wikipedia.org/wiki/Google_driverless_car#cite_note-13)

What if it could be easier and safer for everyone to get around?

To start, we’re building a prototype vehicle that's designed to take you where you want to go at the push of a button—no driving required.

Why self-driving cars matter

Imagine if everyone could get around easily and safely, regardless of their ability to drive.

Aging or visually impaired loved ones wouldn't have to give up their independence. Time spent commuting could be time spent doing what you want to do. Deaths from traffic accidents—over 1.2 million worldwide every year—could be reduced dramatically, especially since 94% of accidents in the U.S. involve human error.

How it works

Our self-driving cars are designed to navigate safely through city streets.

They have sensors designed to detect objects as far as two football fields away in all directions, including pedestrians, cyclists and vehicles—or even fluttering plastic shopping bags and rogue birds. The software processes all the information to help the car safely navigate the road without getting tired or distracted.

How it drives

Like any driver, a self-driving car needs to constantly answer these questions.

Where am I?

The car processes both map and sensor information to determine where it is in the world. Our car knows what street it's on and which lane it's in.

Google’s self-driving automated cars use video cameras, radar sensors and a laser range finder to “see” other traffic, as well as detailed maps (which collect using manually driven vehicles) to navigate the road ahead. This is all made possible by Google’s data centers, which can process the enormous amounts of information gathered by cars when mapping their terrain.Robot drivers react faster than humans, and have 360-degree perception and do not get distracted, sleepy or intoxicated .this project and implimentation would help to create the new “highway trains of tomorrow."