

We're filmmakers working on an AI doc that features developments in the self-driving car industry. Ask us anything!

Self-Driving-Cars ¹ and r/Science AMAs¹

¹Affiliation not available

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Abstract

Hello Reddit! We are filmmakers working with NOVA PBS on a film about artificial intelligence entitled NOVA Wonders: Can We Build a Brain. In the course of making the show, we spent a lot of time reporting on self-driving cars. As we're sure you are aware, there is a lot of hype around autonomous vehicles these days. And, as this week's accident in Phoenix shows, there is still a ways to go. If you're interested in when you might see one of these babies in your driveway, the economic/social implications of self-driving cars, or just have general questions about the state of AI, we'll be back at 12 noon ET to chat, AMA! —Michael Bicks/Anna Lee Strachan, producers of NOVA Wonders: Can We Build a Brain

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SELF-DRIVING-CARS [R/SCIENCE](#)

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Realistically with what you have learned whilst making your documentary, how long before we see self driving cars out number regular cars? How much of what we see on the news is just hyperbole?

[Shnoochieboochies](#)

There is in fact a lot of hype right now. Looking at various PR videos from different companies would make you think self-driving cars are going to be here any day now. What we found in our research is nothing could be further from the truth. The reality is that all autonomous vehicles right now are extremely limited -- when you see videos of them without any safety driver it's actually on a test track or operating only in a meticulously mapped small area so engineers can keep a tight leash on them. Ultimately it's our belief we won't be seeing self-driving cars out number regular cars for many many years.

As a Machine Learning researcher, the two most frustrating features of AI portrayals in the media are 1) Conflating human-level performance on a very specific task with human-level general intelligence and 2) asking engineers economics questions about displacing humans.

How will your team construct a tight narrative for a 1-2 hour documentary and still allow some expert perspective that may throw cold water on the hype?

[frizface](#)

You are correct--many media reports assume that because a computer could win at go that AGI is just around the corner. We spend a fair amount of time dispelling that notion.

As far as asking engineers about displacing humans I could not disagree with you more. One the things that I found frightening in reporting this story is that the many younger engineers seemed ill

equipped to deal with the consequences of their creations.

This to me points to a very serious flaw in our education---people who build the machines that change our lives need to be trained to think about the implications

How would autonomous cars tie in with the proposed "no-ownership" model being proposed by Uber and some other companies?

[astroboysanddeep](#)

They are infact integral to that model. Because the cars can be used 24/7 without a driver the companies believe that it would make self-driving cars a reasonable economic proposition. They think that the zip car model has primed millenials to accept this kind of thing.

How far back in time are you treating the subject of self-driving cars in your documentary -- all the way back to No Hands Across America, for example?

[drsjsmith](#)

We interviewed Brian salesky who was part of that effort but we are focusing on today

How far back in time are you treating the subject of self-driving cars in your documentary -- all the way back to No Hands Across America, for example?

[drsjsmith](#)

Our hour-long documentary is actually about AI in general, of which self-driving cars is part. We basically take a birds-eye view of the field as a whole going back roughly 70 years. The self-driving sequence is current, featuring what companies are doing today.

How long until self driving cars are more affordable than regular cars? When do you think we will see mass adoption of this tech?

[derkthunder](#)

I would think a very long time--which is why most of the companies are focusing on building for fleets which can use the cars 24/7

Is there any personal bias you had to be especially careful for when researching?

[BMison](#)

Bias is of course is a problem in any story--I think in this case my bias would be a certain skepticism about the promise of technology

Are self driving cars going to be able to maneuver the roads of the northern states where snow, ice and potholes are major features of winter driving?

[skiboy53](#)

At the moment no. The Lidar that most self driving cars use to see still has trouble with snow and fog. There is a reason that all of these companies are testing in Nevada and Arizona.

Did you get into the issue of the "Trolley question" when dealing with AI? How many people realize that they're buying a vehicle that could potentially *purposefully* kill the owner/driver/passengers to prevent the death of random stranger(s). Who decides the morality of the AI's programming?

[DeepChill78](#)

The Trolley question is at the heart of the kinds of problems we are going to have to be dealing with. Certainly you would not want the cars owners nor car company's to make that call. This would seem the kind of thing that government is going to have to deal with.

How would an autonomous vehicle deal with something like road rage? If somebody is being terrorized, it is important to get them out of the situation.

I guess the question is this: what other factors, besides staying on the road, might we need to implement to make these cars successful?

[BerttPork](#)

Who knows how they would deal with road rage--they are however programmed to pull over if confronted with a situation they don't understand.

Has the industry done any reflection on the transitional period where people will use their car in self-driving mode most of the time and thus have their driving abilities atrophy, causing loss of life when the car transfers control back over to the driver and they end up wrecking? This is one of my biggest concerns about self-driving cars right now. We're seeing similar problems with airline pilots and those guys are professionals with years of intense training and constant re-training. It seems like the fact that self driving cars will very rapidly hit a "99% automated" plateau causing driver skills to vanish (even worse than they already are) could be a huge threat to safety.

[revmoo](#)

I think that this perhaps one of the largest problems they face--The more autonomous cars become the more folks will be doing other things. This is fine if the car is truly self driving but if it still requires human intervention then it is dangerous

Best I can tell waymo quietly is nearly a decade ahead of every other company, but every other company is super self promotional and recklessly pushing the envelope(case in point Uber killed someone in the past week). Are you approaching this project like every other reporter and going to force feed all the made up nonsense from the firm's that are way behind but aggressively marketing themselves?

[houle](#)

If we're doing our jobs, we're not "force-feeding" anything -- we're trying our best to reflect reality, which is that there is a ton of hype out there about self-driving cars that doesn't reflect the actual state of the

technology. A glance at various PR videos would give the false impression that self-driving cars are real and likely to be in your driveway in 5-10 years. Our research would seem to suggest this is extremely unlikely for a variety of reasons--not just technological. A lot of the hype is likely owed to an extremely competitive environment right now between these companies for investment dollars.

How far do you see the self driving car movement going?

[I_Am_The_Strawman](#)

The first thing you'll probably see in coming decades are autonomous trucks and taxi/delivery services, rather than consumer cars. The reasons for this are many: for one, trucks tend to drive far simpler, predictable highway routes, so they are much easier to program. Similarly, taxi/delivery service vehicles can be limited to operate in tightly controlled small areas. Consumer vehicles on the other hand will take far longer to be adopted -- not just because of the engineering problem (which is years away from getting a car to drive in all situations, let alone weather conditions) but also a cultural one and societal/ethical/economic one.