SDS PODCAST EPISODE 946:

HOW ROBOTAXIS ARE TRANSFORMING CITIES

Jon Krohn:	00:00	This is episode number 946 on how robo taxis are transforming cities. Welcome back to the SuperDataScience Podcast. I'm your host, Jon Krohn. Today's episode will fill you in on how robo taxis are reshaping the way cities work economically, physically, and socially. Right now already, this is no longer sci-fi Waymo is already running fully driverless ride hailing in places like San Francisco, Phoenix, LA, Austin, Atlanta clocking hundreds of thousands of paid rides each week. The company's rolling out in half a dozen other US cities and is announced its first international robotaxis service in London. Last week I spotted my first Waymo in New York, although it was merely a test ride, it had a driver ready behind the wheel in case of issues test rides not withstanding what makes Robotaxis so economically transformative is simple. There's no human at the wheel. You still have to buy charge, clean, ensure, and maintain the cars, but you no longer pay a driver for every hour the vehicle is moving and you can keep that vehicle working far more hours per day than a privately owned car that mostly sits idle.
	01:09	That radically lowers the labor cost per mile and lets the capital cost of the vehicle be spread across many more trips. Safety could be an even bigger deal. Waymo's safety reports show serious injury crashes per million miles that are roughly 10 times lower than human benchmarks, 10 times lower in a self-driving car than if you are driving that car yourself. And an independent study from Swiss Reve, a gigantic Swiss reinsurance company, found around a 90% reduction in bodily injury and property damage insurance claims compared to human driven vehicles. This could mean that in our lifetime it becomes extortion expensive to ensure a vehicle if you're going to have a human driving it. But on the bright side, fewer crashes don't just save lives. They also cut hospital bills, legal costs, and time off work. In the short term, robo taxis look like a premium product.

02:02   Fancy vehicles like Waymo's, sensuous Jaguars, lots of expensive sensors and huge RD spending to recoup. So a ride can cost more on Uber or Lyft right now in San Francisco than with a Waymo. But once fleets are manufactured at scale and software costs are amortized per mile, prices should fall dramatically. Given that the average US household spends roughly 15% of its budget on vehicle ownership. Swapping own a car for subscribed to mobility is going to be very tempting for many city dwellers. Cheap effortless rides, however, are a recipe for congestion if policy doesn't keep up. Congestion is a textbook, externality and economics, every extra car slows everyone else down, but the driver doesn't pay for that delay. New York City's congestion charge in Manhattan cut incoming traffic by about 10% in its first months while boosting transit funding. So that could be the kind of model that we have.

02:58   For example, we might have dynamic road pricing, potentially framed as a robo TAXII fee, which would be essential if large autonomous fleets are to avoid grid locking downtowns. Beyond the safety and the economics, the labor impact is just as big. In the United States today, there are roughly half a million taxi chauffeur and shuttle jobs, another half million bus driver rolls, and about 3 million truck driver jobs. That's several percent of the workforce driving for a living. Those jobs won't vanish overnight, but over a decade or two, the trend is clear. So re-skilling pathways and regional transition plans are critical. If we want automation to ease labor shortages instead of just creating local unemployment. And this is a good example of where it seems like AI is taking away jobs here, but based on every historical transformation due to automation, more job opportunities should come up. They just won't be driving cars as much, and hopefully those new jobs are more intellectually stimulating, more socially enjoyable than moving a gas pedal up and down all day, which doesn't sound like a super fun job to me.

04:14	Alright, yeah. So beyond labor safety, now that we've covered, let's also talk about how robotaxis will change the geometry of cities. US downtowns often dedicate 20 to 30% of their land to parking lots and garages with some central districts edging toward a third. If shared autonomous vehicles reduce private car ownership, we unlock an urban land dividend surface. Lots can become housing parks or offices, and curbside parking can turn into wider sidewalks and bike lanes. The flip side is that comfy cheap self-driving commutes could fuel more sprawl. So pairing robo taxis with things like high capacity buses and shuttles will matter a lot. I focused most of this episode on the us, but globally there are hotspots where robotaxis are spreading intensely as well. In China, for example, Baidu's Apollo Go Pony ai and another company called Auto X, all three of those are already running large scale robotaxis services across mega cities like Beijing, Shanghai, Wuhan, and Shenzhen.
05:19	With Apollo go alone delivering millions of rides each quarter and pushing into new markets like Hong Kong and Abu Dhabi. For all these reasons, the cities and organizations that plan ahead will have a big advantage. There's a lot of low hanging fruit in designing pricing, curb management, and street layouts that assume shared autonomous vehicles will be the default, not an oddity. Data scientists and machine learning practitioners, like many of you listeners out there, have a role to play in everything from the perception models inside the vehicles, fleet routing algorithms, real-time congestion, pricing systems that adjust road fees block by block and minute by minute. As always on the show, the goal is to turn Frontier Tech into something you can use. So as you see more sensor covered cars and robot taxii headlines, don't treat them just as a curiosity, treat them as a preview of a world where mobility is on demand, mostly electric and increasingly autonomous.

06:14   And where the key levers of value are data, algorithms and urban policy. My hope is that this episode has given you a clear mental model for how robo taxis ripple through the economy and a spark to think about where you might plug in, whether that's in AV companies, auto, autonomous vehicle companies, city transport agencies or startups helping cities through the transition. If you'd like to learn more on self-driving tech, you can check out episode number 810 of this podcast, which covered the five levels of self-driving cars. Finally, for folks working in entirely different industries and have no interest in working with Robotaxis directly, there are still lessons food for thought in today's episode. For example, think about where you're seeing the equivalent of Robotaxis in your industry. What are applications where AI currently only does a small percentage of the workflow fully autonomously, but as capabilities continue to improve exponentially more reliability tests are performed and compute costs continue to plummet, that workflow will become autonomous almost all the time or maybe all the time.

07:21   So think about those kinds of those robo taxii equivalents in your industry where there's not that much of the AI can do on that workflow today, but it has huge potential. Alright, that's it for today's episode. I'm Jon Krohn and you have been listening to the SuperDataScience Podcast. If you enjoy today's episode or know someone who might consider sharing this episode with them, leave a review of the show on your favorite podcasting platform, tag me in a LinkedIn post with your thoughts, and if you haven't already, be sure to subscribe to this show. Until next time, keep on rocking it out there and I'm looking forward to enjoying another round of the SuperDataScience Podcast with you very soon.