Selected Papers of #AoIR2024:
The 25th Annual Conference of the
Association of Internet Researchers
Sheffield, UK / 30 Oct - 2 Nov 2024

LICENSE TO SURVEIL? IMAGINING THE FUTURE OF VEHICLES AS COMPUTERS

Gabriel Pereira
University of Amsterdam

Recently, vehicle surveillance has emerged as a threat for women seeking abortions in the USA (Cahn & Manis, 2022). This is just an instance of the many privacy and justice issues posed by widespread collection of vehicle data around the world, a history that traces back decades (Bridle, 2013). With the increasing datafication of vehicles, new questions are emerging: What happens when “smart vehicles” are themselves producing detailed surveillance data, for example through their embedded GPS? With the rise of self-driving vehicles, are cars becoming roving surveillance cameras?

Gekker & Hind (2019) ask such questions to argue for connected and autonomous vehicles (CAVs) as media infrastructures (Parks & Starosielski, 2015). They propose a new model of privacy, “infrastructural surveillance”, identifying the rise of an “invisible and omnipresent” infrastructure that aggregates data sources via developed standards, and to some extent decentralizes knowledge production toward non-human agents. In sum, constant surveillance is built into the operation of CAVs.

Although CAVs may still be far into the future, these speculative technological futures of vehicle data are already in flux. The “algorithmic imaginaries” (Bucher, 2017) of actors are already troubled by a dominant datafication discourse, whereby everything is and will be taken over by the imperative of data, and more recently AI (Sadowski, 2019). This paper asks: How does this future-oriented imaginary relate to current practices in vehicle data, particularly for policing? At the same time, how is this imaginary unfolding as privacy/justice concerns for activists and regulators?

This research draws from semi-structured interviews with over 30 people working on algorithmic surveillance—including police officers and surveillance manufacturers, but also activists and regulators. Within a larger project, they were asked about how they saw the future developments in vehicle data. It also builds on fieldwork conducted at policing/traffic conferences, particularly sessions on “the future” or “emergent technologies”. This paper used situational analysis (Clarke, 2003) to map this emergent field and its imaginaries.

Suggested Citation (APA): Pereira, G. (2024, October). *License to surveil? Imagining the future of vehicles as computers*. Paper (or panel) presented at AoIR2024: The 25th Annual Conference of the Association of Internet Researchers. Sheffield, UK: AoIR. Retrieved from http://spir.aoir.org.

Vehicles as connected computers

First, there is an increased narrative of vehicles as connected computers. This perhaps indicates that Gekker & Hind's (2019) "infrastructural surveillance" is, in some ways, already a reality (cf. Hind et al., 2022). As spoken by a police officer and representative of a surveillance software company: "Really, I want people to start thinking about vehicles as nothing more than a computer on wheels. And for us [officers] that [means] we can be able to go in and get information out of these particular vehicles." Vehicles are seen as generating data in a plethora of ways: "So whether it be connected devices, meaning cell phones, whether it's voice recordings inside of vehicles, odometer readings, gear shifts, door opening events, power events, getting text messages out of a particular infotainment system, that stuff can be very valuable for today's investigation" (ibid).

Not only is data already being captured by vehicles, but an intrinsic collaboration between policing institutions and the vehicle industry exists to facilitate this sharing—e.g. data from General Motor's OnStar GPS system can be easily requested by law enforcement, potentially without a warrant (Beggin, 2022). The boundaries and privacy regulations that apply to vehicle data are still largely undefined, however. This may be a consequence of the obfuscation of the data produced by vehicles, as the systems conceal data gathering in their normal operation (c.f. Bridges, 2021). Even a highly-specialized British policy advisor rhetorically asked: "What does Nissan do with the data from my electric Leaf?" This lack of clarity on what/how data is collected and who has access to it co-exists with the banality of such data, as it is generated for an accepted and politically unproblematic goal (Pereira & Raetzsch, 2022; Brayne, 2022).

In policing conferences, there were frequent references to how the development of connected technologies outpaces the legislation. New laws were pointed as a solution for this, but platformization still plays a central role. That is, vehicle manufacturers are responsible for managing data infrastructures, including which/how third-parties have access (cf. Dijck et al., 2018; Plantin et al, 2018). Among activists and regulators, this future leads to anxiety around function creep, as manufacturers may decide to change their policies, or new forms of analysis may be enabled for policing.

Futures of data excess and AI—but also smaller solutions

Second, a key concern troubling different actors is that, with the exponential production of vehicle data, a "data deluge" will unfold whereby data excess will become a norm. As stated by the representative of a vehicle manufacturer: "in the future, you're going to see vehicle to everything, which is V2X. And as vehicles communicate with each other and with the infrastructure, there will be signatures left behind that will be valuable info forensically." Although this is considered a boon by police institutions, some are concerned of the difficulties that may emerge. A Danish police manager, for example, said he was afraid increased resources would be needed to "find the needle in the haystack"—resources he says he doesn't currently have.

In response to this future, there is a growing industry focus on developing infrastructures for merging policing data sets. The rationale goes that unless all data is integrated in real-time, through platforms such as FususOne, officers will be overwhelmed by excessive data. These platforms currently integrate data from Automated License Plate Recognition (ALPR), police drones, among other surveillance infrastructures, but importantly imagines a future in which private data sources will be folded in—including vehicles themselves.

Some actors are excited for AI as a solution for analyzing mounting vehicle data. These imaginaries give continuity to debates on predictive policing (Brayne, 2021), and the many injustices it generates—a continuous concern of activists. Recently, a police department in NY claimed to use AI and ALPR data to detect "a journey typical of a drug trafficker", leading to an arrest (Brewster, 2023). These futures of vehicle data analysis are responses to both the belief that AI is well-suited for dealing with an ever-increasing scale of vehicle data; but also to a wider techno-solutionist framing: as stated by a police manager, "generative AI will change how we send emails and write reports, but also radically change policing."

Although this grandiose imaginary occupies headlines and industry events, it co-exists with a reality in which vehicle data tracking is changing in much smaller, iterative ways. For example, most interviewees pointed to a future integration of facial recognition to ALPR. Even more banal are bespoke solutions such as the Monocam/Tiresias project in the Netherlands, which adds AI to surveillance cameras to detect if drivers are using a mobile phone. None of these use vehicles themselves to produce the data, instead relying on long-existing infrastructures of state surveillance.

Conclusion

This paper engages with the future-oriented imaginaries of vehicle data to show how they impact current practices in policing and activism. It finds: 1) in direct relation to Gekker & Hind's (2019) "infrastructural surveillance", that vehicles are already imagined as connected computers, constantly generating surveillance data; 2) how a concern of a data excess is responded through increased data integration and a techno-solutionist narrative of AI, but also smaller interventions. The paper thus contributes to critical data studies literature, supporting renewed considerations for privacy and justice frameworks in a world where vehicles act as infrastructures for constant surveillance.

References

Beggin, R. (2022). Police Don't Need a Warrant to Pull Personal Data from Cars. *Governing*. https://www.governing.com/security/police-dont-need-a-warrant-to-pull-personal-data-from-cars

Brayne, S. (2021). *Predict and surveil: Data, discretion, and the future of policing*. Oxford University Press.

Brayne, S. (2022). The Banality of Surveillance. *Surveillance & Society*, *20*(4), 372–378. https://doi.org/10.24908/ss.v20i4.15946

Brewster, T. (2023). This AI Watches Millions Of Cars Daily And Tells Cops If You're Driving Like A Criminal. *Forbes*.

https://www.forbes.com/sites/thomasbrewster/2023/07/17/license-plate-reader-ai-criminal/
Bridges, L. (2021). Infrastructural obfuscation: Unpacking the carceral logics of the Ring surveillant assemblage. *Information, Communication & Society*, *24*(6), 830–849. https://doi.org/10.1080/1369118X.2021.1909097
Bridle, J. (2013). How Britain Exported Next-Generation Surveillance. *Medium Matter*. https://medium.com/matter/how-britain-exported-next-generation-surveillance-d15b5801b79e
Bucher, T. (2017). The algorithmic imaginary: Exploring the ordinary affects of Facebook algorithms. *Information, Communication & Society*, *20*(1), 30–44. https://doi.org/10.1080/1369118X.2016.1154086
Cahn, A. F., & Manis, E. (2022). Pregnancy Panopticon: Abortion Surveillance after Roe. *STOP*. https://www.stopspying.org/pregnancy-panopticon
Clarke, A. E. (2003). Situational Analyses: Grounded Theory Mapping After the Postmodern Turn. *Symbolic Interaction*, *26*(4), 553–576. https://doi.org/10.1525/si.2003.26.4.553
Dijck, J. van, Poell, T., & Waal, M. de. (2018). *The platform society*. Oxford University Press.
Hind, S., Kanderske, M., & van der Vlist, F. (2022). Making the Car "Platform Ready": How Big Tech Is Driving the Platformization of Automobility. *Social Media + Society*, *8*(2). https://doi.org/10.1177/20563051221098697
Parks, L., & Starosielski, N. (Eds.). (2015). *Signal traffic: Critical studies of media infrastructures*. University of Illinois Press.
Pereira, G., & Raetzsch, C. (2022). From Banal Surveillance to Function Creep: Automated License Plate Recognition (ALPR) in Denmark. *Surveillance & Society*, *20*(3), 265–280. https://doi.org/10.24908/ss.v20i3.15000
Plantin, J.-C., Lagoze, C., Edwards, P. N., & Sandvig, C. (2018). Infrastructure studies meet platform studies in the age of Google and Facebook. New Media & Society, 20(1), 293–310. https://doi.org/10.1177/1461444816661553
Sadowski, J. (2019). When data is capital: Datafication, accumulation, and extraction. *Big Data & Society*, *6*(1). https://doi.org/10.1177/2053951718820549