

THE ETHICS OF THE INTERNET OF THINGS

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CONTENT WARNINGS

Frank talk of injury and death

Discussion of sexual assault

Image of raw meat

WHO AM I?

Senior Data Scientist

Mathematician & Engineer

Aerospace, Biotechnology, Finance

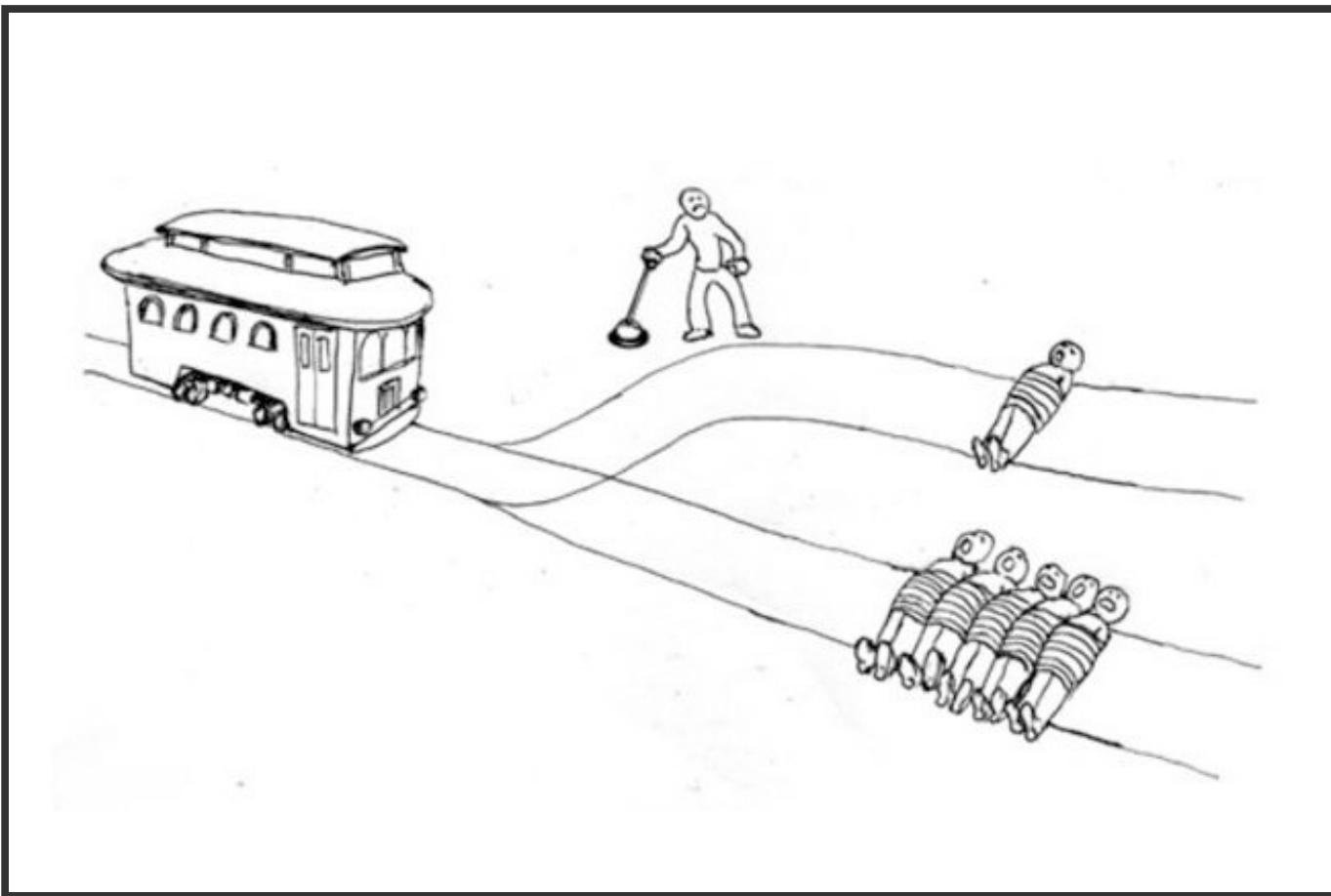
THE INTERNET OF THINGS

**Putting the internet into ordinary devices
and services**



<https://www.amazon.com/Zojirushi-BB-CEC20-Supreme-2-Pound-Loaf-Breadmaker/dp/B002XVUAOU>

ETHICS



<http://nymag.com/selectall/2016/08/trolley-problem-meme-tumblr-philosophy.html>

Why do people think the trolley problem is critical for self-driving cars? The trolley problem wasn't critical even for trolleys.

– Andrew Ng (@AndrewYNg) October 27, 2016

We don't often face true ethical
dilemmas in tech.

We just act without ethics.

In practice, ethics are about the analysis of harm and the mitigation of risk.

Harm happens in three ways:

- Malfeasance (e.g. hacking);
- Failure (e.g. bugs);
- Edge Case (e.g. unplanned scenario).



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Home automation: when an expired certificate leads to water on the floor



<https://twitter.com/AndrewX192/status/846134369584492544>



▶ 0:00 / 0:27



In 2015, a woman in Lancaster, PA called police to report a rape. Police found her Fitbit and analyzed the data.

She was charged and convicted with making false statements.

The prosecuting attorney said the Fitbit data "sealed the deal."

http://www.pennlive.com/news/2016/04/watch_today_segment_on_how_fit.html

Our devices can bear witness against us
without any assurance of accuracy or
quality.

- 2017: A man is charged with the murder of his wife based on her Fitbit motion tracking.

<http://www.cnn.com/2017/04/25/us/fitbit-womans-death-investigation-trnd/>

- 2016: Police use data from a smart water meter in a murder investigation.

<http://5newsonline.com/2016/12/28/bentonville-police-use-smart-water-meters-as-evidence-in-murder-investigation/>

- Police also filed a warrant for Amazon Echo data in the same investigation.

<http://5newsonline.com/2016/12/27/privacy-advocates-raise-concerns-over-bentonville-pds-warrant-for-amazon-echo-recordings/>

Who goes to jail when a device
bears false witness?

Who is liable when a device
causes an accident?

RAW: Moment when Google self-driving Car hits Bus in Mountain View, California



SANTA CLARA VALLEY TRANSPORTATION AUTHORITY

Settings



0:03 / 1:29



<https://www.youtube.com/watch?v=I9T6LkNm-5w>

Google acknowledged fault:

The car "predicted that [the bus] would yield to us because we were ahead of it."

*So the actions of autonomous robots devising
their own means to attain a task may not be
subject to liability under any of theories of
tort...*

The Hon. Curtis E. A. Karnow, "The application of traditional tort theory to embodied machine intelligence," The

Robotics and Law Conference, Stanford, CA, 2013

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Thank you!

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