

DISEASE, WEARABLES
& AI

AN AI ETHICS
CASE STUDY

DISEASE, WEARABLES, AI & SOCIETY

If Fitbit determines someone is contagious, should the company publicly reveal where the person was, and when? (With whom?)
For which kinds of diseases?

When it comes to diseases, is there no such thing as “personal” information? In other words, should all communicable disease data be public?



Michael Herf @herf · 2d

Every time I've had pneumonia, my fitbit resting heart rate has anticipated the symptoms by several days. We should be able to test for COVID-19 using metro-level information from wearables. See the Jennifer Radin (Scripps) paper about this idea:



Harnessing wearable device data to improve state-level...
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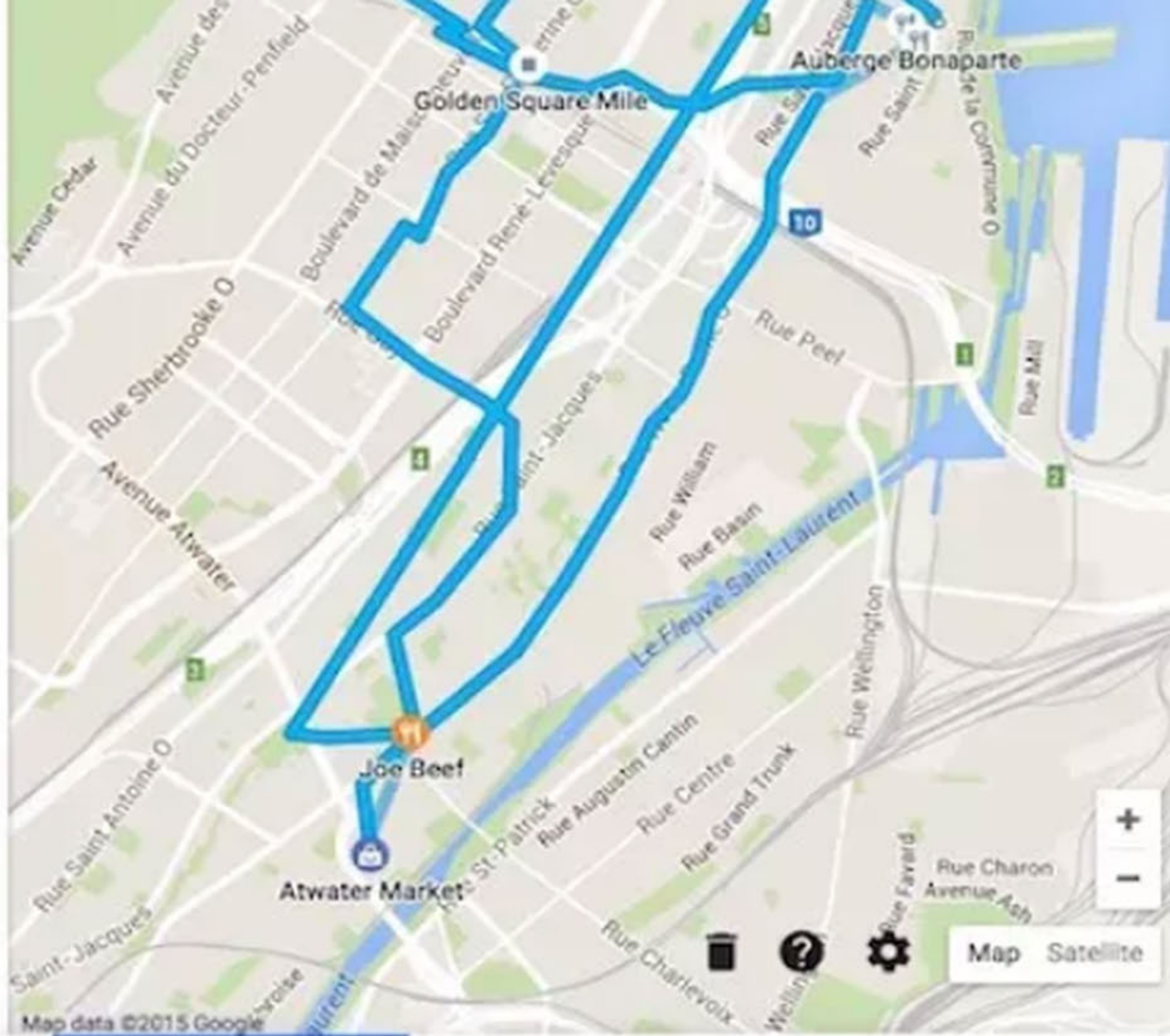
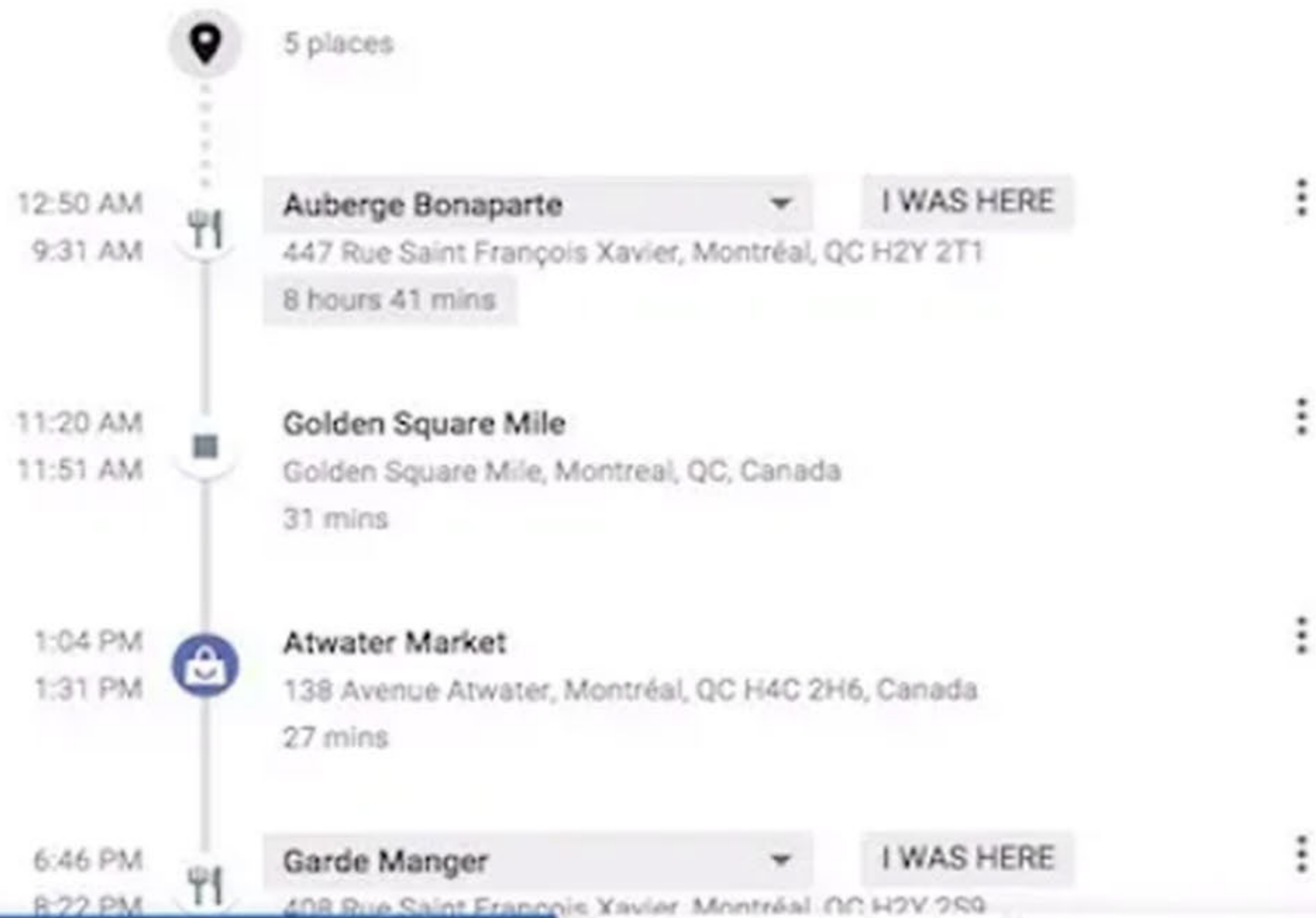
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Trip to Burlington and Montreal



Trip to Burlington and Montreal
Apr 29 – May 3, 2015

29 Wednesday
April 2015

30 Thursday
April 2015

01 Friday
May 2015

02 Saturday
May 2015

03 Sunday
May 2015

Google tells you where you've been and when, but public health authorities in the US can't use the data.

DISEASE, WEARABLES, AI & PROFITS

Should Fitbit sell acquired disease information to pharmacy companies, hospitals, doctors, for profit? (It may be *very* profitable.)

Is there a difference between light diseases including colds, and lethal viruses? Where do you draw the line? Why?



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DISEASE, WEARABLES, AI & USERS

Would you as a user let Fitbit have property rights to your data (or some of your data) in exchange for a free device and diagnostic alerts when illness seemed imminent?



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DISEASE, WEARABLES, AI & FAIRNESS



Michael Herf @herf · 2d

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Provocation: It could be that Fitbits are used predominantly by a demographic segment (men over 45, for example). The disease analytics, consequently, work well for them, but not so well for others because there's not enough data to generate reliable knowledge. Can the case be made that no one (no demographic) should get access to the diagnostic analyses if they don't work for everyone (all demographics)?

DISEASE, WEARABLES, AI & EXPLAINABILITY

Is the case of the black box AI surgeon analogous with a black box Fitbit disease diagnosis?

For public safety use of Fitbit disease data and diagnosis, is it necessary to explain in terms of human, causal reasoning how the diagnosis is justified?



↻ Data Science Ethics Retweeted

Geoffrey Hinton @geoffreyhinton · 4d

Suppose you have cancer and you have to choose between a black box AI surgeon that cannot explain how it works but has a 90% cure rate and a human surgeon with an 80% cure rate. Do you want the AI surgeon to be illegal?

💬 841

↻ 1,167

❤️ 5,186



CRISP @CrispSurv · 4d

BBC News - Barclays scraps 'Big Brother' staff tracking system

DISEASE, WEARABLES, AI & EXPLAINABILITY & ACCOUNTABILITY

What are socio-technical
safeguards and accountability?

Where *should* responsibility lie?
For what?



Geoffrey Hinton @geoffreyhi... · 2/20/20 ✓
Suppose you have cancer and you have to choose between a black box AI surgeon that cannot explain how it works but has a 90% cure rate and a human surgeon with an 80% cure rate. Do you want the AI surgeon to be illegal?

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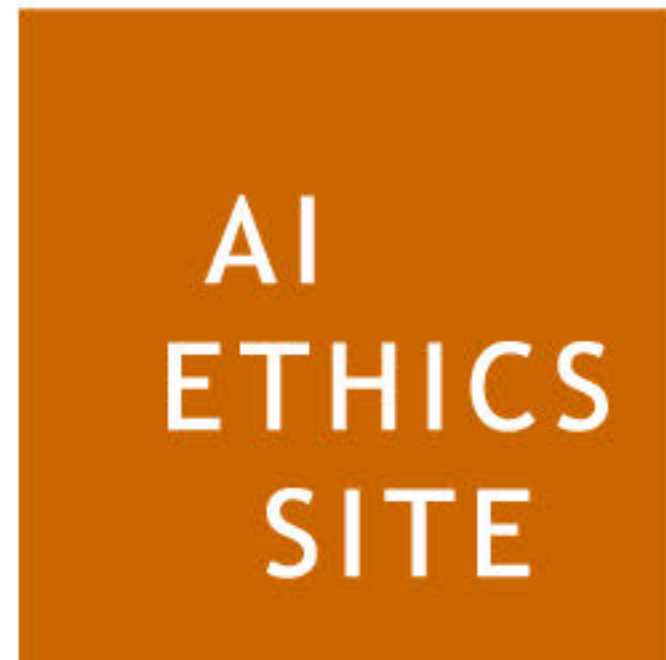
Virginia Dignum @vdignum · 2/22/20 ✓
Explanation is not the issue.

Even in the unlikely case that such #AI system operates alone, trust on AI is not just about algorithm explanation but must include socio-technical safeguards & accountability.

Where you suggest to lay responsibility @geoffreyhinton?



James Brusseau
Philosophy Department
Pace University NYC



AI Ethics Site
Artificial Intelligence + Human Experience