Economics, Law and Ethics
Part IB CST 75%, Part II CST 50%
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with many thanks to Ross Anderson

Overview

- Contemporary ethical issues:
  - Algorithmic decision making and bias
  - Environmental impacts
  - Power of private platforms
  - Privacy
  - Ethics in the workplace

What ethical issues in computer science do you find concerning, and why?

Algorithmic decision making and bias

- Efficiency is prized by computer scientists
- Can lead to unwanted effects, e.g. biased decision-making
- We saw Calıskan's work on how AI inhales racial and other prejudice with training data

Algorithmic decision making and bias

- 2016: COMPAS incorrectly judged black defendants to be at higher risk of recidivism
- 2018: Amazon scraps recruitment tool after finding it was biased against women
- 2019: Healthcare algorithm prioritised white patients over more ill black patients
- 2019: Tweets by African Americans more likely to be flagged as 'offensive'

Predictive policing

- Analytical techniques to prioritise law enforcement activity and identify potential criminal activity

- 2018 FoI request by Liberty: used by 14 UK police forces

- Concerns about racial profiling and discrimination, increased surveillance, and privacy incursions

2020 A-level results

- Exam cancellations due to the pandemic led to A-level results being decided by algorithms

- Criticised for disadvantaging students from lower socio-economic backgrounds

- Public protests led to withdrawal of these grades

Justifying decisions

- Broader problem: many AI systems cannot explain their actions

- Commercial algorithms are proprietary

- "Computer says no" doesn't work where people have a right to an explanation and many kinds of discrimination are explicitly illegal

Environmental impacts

Environmental impacts

- Tragedy of the commons
- Technological advances have lead to pollution and the depletion of natural resources

e-Waste

- e-Waste is recognised as the fastest-growing waste stream in the industrialised world
- Toxic substances pose a hazard to humans and the environment
- Solutions start with redesigning products to minimise/eliminate toxic substances
- Valuable raw materials can be recovered

e-Waste recycling

Power of private platforms

- Tim Wu's "The Attention Merchants" gives history of advertising and propaganda from 1830s tabloids through Hitler to sitcoms
- Auction theory tells us about polarisation
- Social network theory about echo chambers
- Politicians are now paying real attention...

Gamification and engagement

"We sought to mine as much attention as humanly possible… We took a page from Big Tobacco's playbook, working to make our offering addictive at the outset" (Tim Kendall, Director of Monetization, Facebook 2006-2010)

Gamification and engagement

- Addiction analogy – alcohol, tobacco, fast food and gaming (Wylie, *Mindf*ck*)

- Commodification of attention

- Information asymmetry – platforms know much more about us than we know about them

- Implications for privacy – the past cannot be forgotten

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Adrian Mole

'And please! … please! … send my diaries back. I would hate them to fall into unfriendly, possibly commercial hands. I am afraid of blackmail; as you know my diaries are full of sex and scandal. Please for the sake of our continuing friendship… send my diaries back!'

(Townsend, *The True Confessions of Adrian Mole*, 1989)

The public v. private face

- Facebook
- Google

(Stephens-Davidowitz, *Everybody Lies: What the Internet can tell us about who we really are*, 2017)

Example: Sexuality

- Kinsey: 10% American men are gay (open to debate)
- Facebook: 2.5% of male users who list a gender interest are interested in men
- Google: About 5% of male porn searches are for gay-male porn
- Google: More searches for "Is my husband gay" than "cheating", "an alcoholic", or "depressed"

(Stephens-Davidowitz, 2017)

Privacy

- Privacy
  - Economic analysis alone is insufficient as privacy is very context-dependent. Data protection regulation changed with GDPR
  - Privacy often a touchstsone issue in ethics

- Freedom of Information
  - Like privacy laws, FOI laws push back on the 'natural' flow of data from the weak to the strong. We have rights not just to data but to the basis of decisions that affect us

Privacy

- 2014 report on Big Data by the US President's Council of Advisers on Science and Technology

- Spread of gesture, speech and video interfaces will lead to cameras, microphones everywhere

- Can't stop data collectors; can't regulate processors (they claim); so have to regulate uses

- Problem: US privacy law regulates only a few uses (such as video rentals) and is weak even there

Privacy (2)

- Google v González, European Court of Justice, 13 May 2014

- Search on Mr González returned reference to a lawsuit against him in 1998

- Google said, that's not our problem.

- ECJ: Oh yes it is! He can ask either the newspaper or Google to take old stuff down

Health privacy

- David Cameron said in 2011 that NHS records would by default be made available for research (the 'transparency' agenda …)
- Don't worry: our records would be anonymised, and we'd have an opt out
- Opt-out is needed because of European privacy law (I v Finland, ECHR, 2010)
- But anonymisation doesn't really work for rich linked data (e.g. 'atrial fibrillation, Hammersmith, Mar 19 2003')

Health privacy (2)

- The Hospital Episode Statistics (HES) database has a record of every finished consultant episode going back 15 years (about a billion in total)
- Mar 2014: formal complaint to ICO that PA put HES data in Google cloud despite many rules on moving identifiable NHS data offshore
- Apr 2014: HSCIC reveals that HES data sold to 1200 universities, firms and others since 2013
- HES ID leaks postcode, dob in most cases
- 2018: many patients' opt-outs were simply ignored

How can researchers deal ethically with privacy?

- See Nuffield Bioethics Council project on biodata for four principles
  - Ethics based on respect for persons
  - Satisfy human-rights and other applicable law
  - Set reasonable expectations in discussion with people with morally relevant interests
  - Effective and justified systems of governance and accountability

Ethics in the workplace

- Whistleblowers

- Walkouts and strikes

- 2019: Google agreed not to renew deal to help the Pentagon build AI tools for drone warfare

- 2020: Microsoft joins Amazon and IBM in decision not to sell face recognition technology to law enforcement

Conclusion

- Technology is constantly changing status, money and power. How do we navigate?

- Economic incentives have their limits

- Lawmakers take 10–20 years to catch up

- Human-rights law can give broad principles but it's a floor rather than a ceiling

- So even if your business model is legal today, it might not be tomorrow

- Does it pass the "front page test"?