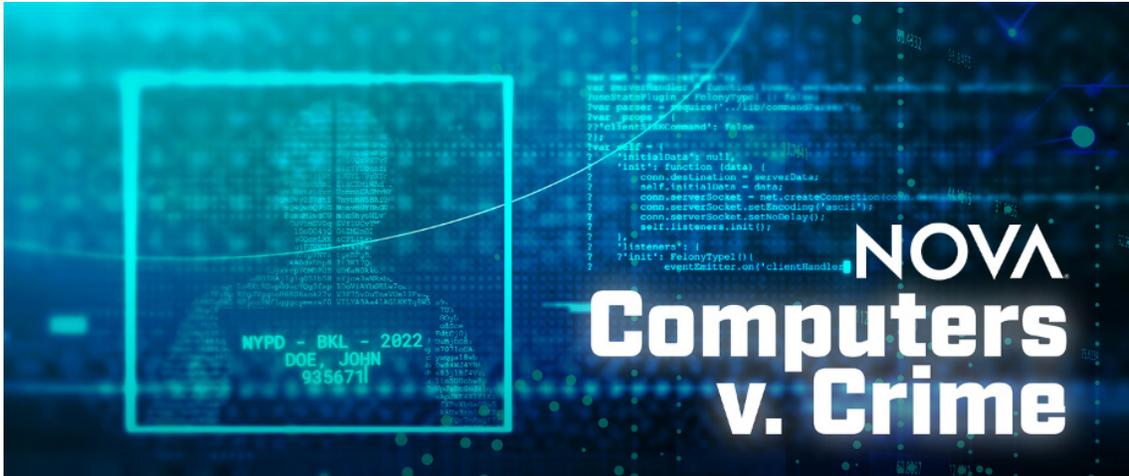


# COMPUTERS V. CRIME WITH NOVA

DISCUSSION GUIDE

# CHM



This event was made possible by the generous support of the [Kapor Center](#).

In police departments and courts across the country, artificial intelligence is being used to help decide who is policed, who gets bail, who is sentenced, and who gets parole. But is it actually making our law enforcement and court systems fairer and more just?

NOVA explores these questions in their documentary, *Computers v. Crime*, an investigation into the flaws of controversial criminal justice technology. CHM hosted two participants in the film, UC Berkeley professor Hany Farid and neuroscientist Vivienne Ming, to deconstruct the biased algorithms behind the tech and discuss their impact with KQED journalist Rachael Myrow.

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## About This Guide

This guide introduces provocative questions for reflection and conversation to enhance and extend what you learn through watching the video. It is suitable for mature high school students and college and adult learners in an educational, professional, or social setting. It may be particularly interesting for people who are curious about the intersection of tech and social justice.

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## Watch Video

[Event video viewing time: 1:13:38](#)

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## For Discussion

### Better than Humans?

Watch the first excerpt in the NOVA film from 24:57- 27:17 at <https://www.pbs.org/wgbh/nova/video/computers-vs-crime/>

Hany Farid and his colleagues began their research by asking if computer algorithms predicting crime are better than humans at avoiding racial bias.

1. Did the results of the study surprise you? Why or why not?
2. Past criminal conviction turned out to be a proxy for race in the study. How could the researchers have adjusted the study to avoid that happening?
3. What other unconscious biases may have been at play during the study? (Consider that the participants were told about subjects' age and gender as well as prior convictions.)

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### **Baked In Bias** (9:46)

Machine learning uses historical data to recognize patterns and make predictions about the future. Hany believes it's naive to think that it's possible to create software that's not racist.

4. What reason does Hany give for his position? Do you agree with him, or do you think he overstates his case? Explain your answer.
5. Why do you think people tend to trust computers, algorithms, and big data? What problems does this pose for the criminal justice system?

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### **Digital Redlining** (12:08)

Hany discusses how computer algorithms end up normalizing bias in criminal justice but also in banking, healthcare, hiring, and other decision-making areas of people's lives.

6. Rachael Myrow refers to this normalization of bias as "digital redlining." What is she referring to? Do you think it is an accurate term in this case? Why or why not?
7. What are the dangers for a democratic republic when civil liberties are being abused by machines? How can an individual citizen push back if they've been harmed by computer bias?

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### **A Failure of Oversight** (16:30)

No one is providing quality control for algorithms, notes Hany, and Rachael points out that partisan gridlock in Congress prevents government regulation.

8. What other factors were discussed that might prevent effective oversight of tech algorithms? Can you think of anything that was not mentioned? What's the solution?

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### **The No Box Movement** (18:59)

Vivienne Ming shared a story about how predictions regarding human behavior can have surprising twists.

9. Did the outcome of Vivienne's study surprise you? Why or why not?
10. Could people's assumptions about "the box" possibly be changed? How?
11. Vivienne's students' solution to helping youth avoid being remanded into custody was creative. Can you think of another way to solve this problem using technology?

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### **The Most Sexist Recruiter**

Watch the second excerpt in the NOVA film from 33:33-35:36 at <https://www.pbs.org/wgbh/nova/video/computers-vs-crime/>

Vivienne describes how Amazon's new hiring algorithm, trained on biased historical data, ended up even more sexist than any recruiter.

12. What are gender markers in data? Make a list of those you think the Amazon algorithm may have correlated with women, for example, a typically female first name or attending an all-women's college.

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### **We Can't Scrub History** (25:07)

Vivienne says it's impossible to scrub the history out of data and rebalance it because it's just too complicated.

13. What is the difference between correlation and causation? Why is confusing the two a problem?
14. Vivienne believes that determining who had gotten a promotion during their first year of working at the Amazon was the wrong question to ask. What would have been a better question around which to build an unbiased hiring algorithm?

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### **Uncritical Thinking** (27:33)

Vivienne says academia, particularly computer science programs, are a big part of the problem with biased artificial intelligence.

15. What are some of the problems Vivienne describes? What would you rank as the biggest problem?
16. Hany thinks that the tech sector in general is also part of the problem. Do you agree with any aspects of his position? Why or why not?
17. How can the massive scale of data and choice contribute to the problem? What has Vivienne's research uncovered in this area? What do you think of the results? Are you surprised or not?

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### **Self-Fulfilling Prophecies**

Watch the third excerpt in the NOVA film from 29:50-31:35 at <https://www.pbs.org/wgbh/nova/video/computers-vs-crime/>

The case study in the excerpt shows how historic over-policing in certain Oakland neighborhoods resulted in biased self-fulfilling prophecies about drug crimes, despite drug use being a city-wide problem.

18. The researchers used public health data to reveal a different portrait of Oakland neighborhoods than that delivered by the drug crime prediction software. Can you think of other types of large datasets that may have been helpful?

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**It's Politics** (35:26)

Hany argues that objective functions that maximize certain outcomes deliver on what people want for largely political reasons.

19. Explain what Hany means by an "objective function."  
Do you believe that algorithms are incentivized by the wrong things as he argues? Why or why not?
20. Consider Vivienne's cholera prediction experiment.  
Can you imagine other ways that humans might partner effectively with computers and AI to help humanity?

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**Additional Resources**

[Is AI Racist?](#) (video)

[Rebooting Big Tech](#) (blog)

[Computers versus Crime](#) (blog)