Case Study: Fair Credit Reporting Act

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What is the Fair Credit Reporting Act (FCRA)?

- The FCRA (15 U.S.C. §1681), from 1970, is one of the oldest privacy laws in the world

- Primarily, it governs relationships between consumers and credit bureaus

  - A credit bureau (technically, a "consumer reporting agency") is an entity that reports consumer financial behavior and/or compiles reports on people

- The FCRA restricts who can receive credit reports and when

- It also gives consumers certain rights

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Why Was the FCRA Passed?

- Credit bureaus date to the mid-19th century—but back then, they mostly collected gossip about the well-to-do, often from servants

  - Are they talking to multiple lenders?

  - Have they cut back spending on the household—dinners, staff, etc.?

  - Do they pay their employees promptly?

  - Are they gamblers?

- The spread of large computers in the 1960s made collecting large amounts of data on individuals feasible

- Academics and legislators had been worrying about giant computer databases

Consumer Rights Under the FCRA

- The right to free annual credit reports from each major credit bureau

- The right to receive a free credit report if it is used against you, e.g., to deny you a loan

- The right to dispute inaccurate information

- Under certain circumstances, especially connected with mortgage applications, the right to learn your *credit score* (15 U.S.C. §1681g) and "all of the key factors that adversely affected the credit score of the consumer in the model used" (15 U.S.C. §1681g(f)(1)(C))

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What's a *Credit Score*?

- Legal definition: "a numerical value or a categorization derived from a *statistical tool or modeling system* used by a *person* who makes or arranges a loan to predict the likelihood of certain credit behaviors, including default" [emphasis added] (15 U.S.C. § 1681g(f)(2)(A)(i))

- By far the most common credit score is the FICO (Fair Isaac Corporation) score; the basic algorithm dates to 1958

- What if the "statistical tool or modeling system" is an AI algorithm?
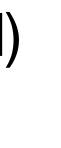
- Is a "person" really involved?

Let's do a deep dive…

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FICO Factors

The details are proprietary but some items have been disclosed

- Payment history, including late payments, foreclosures and repossessions, bankruptcies, etc.

- Debt burden, across different types of debts, including balance to limit ratio, number of accounts with balances, etc.

- Length of credit history (by law, data older than 7–10 years generally can't be used)

- Types of credit used

- Recent searches for credit

First Question…

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- Where did the training data come from?

- How was it labeled?

- *Was the training data unbiased?*

  - Does it properly reflect *all* communities?

  - Minorities? Immigrants? Urban, suburban, rural? Young, middle-aged, retired?

  - Does it reflect different usage patterns and repayment probability among all of these groups?

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Labeling the Training Data

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- Training data may have to be *labeled*

- That is, humans may have to decide what different data points mean

- Does this labeling process reflect preexisting biases of the labelers?

- Does the training data reflect preexisting societal biases, e.g., historically segregated housing patterns?

Proxy Variables

Proxy Variables

- By law, certain things *cannot* be used in credit decisions, e.g., race, gender, religion, national origin, etc.

- But these categories often correlate with others

  - Names can denote gender or ethnic origin

  - Zip codes correlate with race (even though "redlining" was outlawed more than 50 years ago)

  - Hobbies can correlate with gender

- Are proxy variables to barred categories present in the training data?

Relevant and Irrelevant Variables

Relevant and Irrelevant Variables

- Why should name or hobbies be evaluated for a credit score?

  - But sometimes, there are real but surprising correlations—people with poorer credit scores tend to have worse driving records and hence higher car insurance premiums

- There may be unreported positive data, e.g., a running tab at a local store that you pay off promptly every month

- There may be inapplicable data: in Manhattan, many fewer people have cars and hence do not have car loans

Problems with training data can be used to contest almost any AI-based system.

Building a Contestable FCRA-Compliant AI System

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First Steps

- We've built a system and trained it

- We've verified that the training data is ok

- What's next?

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- *How do you verify the model?*

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- You need new data

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- What are the statistical patterns of grants and denials?

- Do they show bias?

- Do they show impermissible bias, bias not accounted for by actual economic differences?

- Would you recognize the bias, or is it due to subtle factors, e.g., different rates of certain diseases for different races?

Applicant Data

- Can you verify that the applicant's data was fed in correctly?

- What happens if you re-enter it?

- Is the system being continuously retrained, from new data? Can you rerun the application with data from a previous date?

Who Might Challenge a Determination?

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- Someone who wants credit?

- A journalist doing an investigation?

- A regulator looking for bias?

What Do Challengers Already Know?

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- Applicants: their own personal financial situation

    - What loans and credit cards they have

    - What their payment history looks like

    - What their credit history is like

    - *Do these match what the credit bureau thinks?* Recall the right to correct erroneous information.

- Journalists and regulators

    - Pre-planned scenarios—but do these fake people have credit histories?

What Might Challengers Need to Learn?

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- What were the primary reasons for rejection?

  - Remember the right to learn "all of the key factors that adversely affected the credit score of the consumer in the model used" (15 U.S.C. §1681g(f)(1)(C))

  - Can an AI specify that?

- Other data in their credit reports—they have a right to obtain that

- How a FICO score is calculated? That's proprietary and closely held—but should it be, if it's part of the AI model?

  - What has previously been published or disclosed about the challenger's FICO score?

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And a Legal Question…

- A credit score must be "used by a person" to make a credit determination (15 U.S.C. § 1681g(f)(2)(A)(i))

- A pure AI system does not qualify

- But does that person simply blindly accept what the AI says?

  - What is the history of overrides?
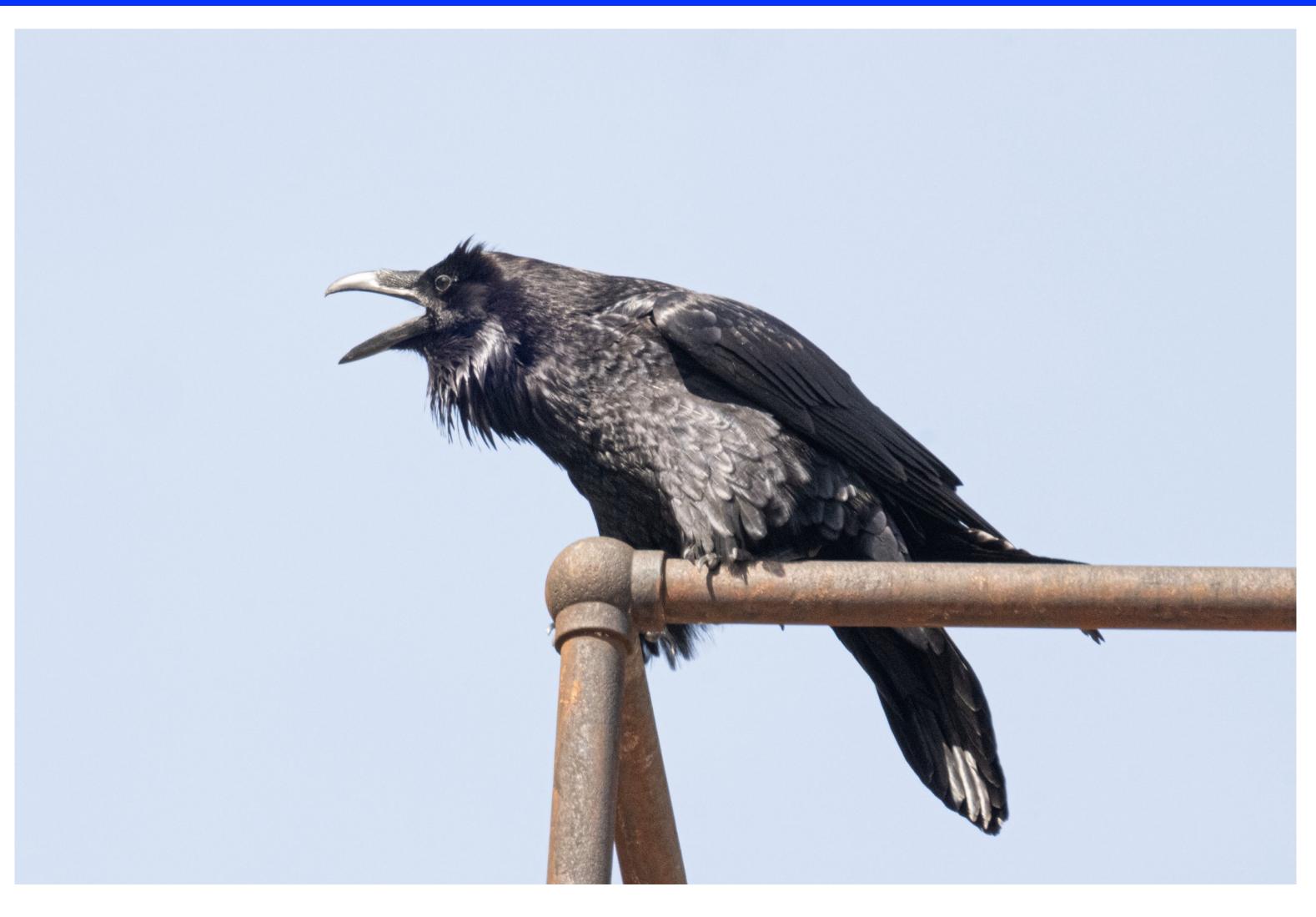
  - Can an applicant contest a decision with a person?

Anything Else?

Questions?

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