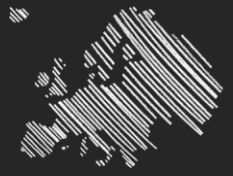
Fair AI Decision-Making Unveiled

Understanding Unfair Data Contribution and Shaping Fair Social-Networks

Adrián Arnaiz Rodríguez



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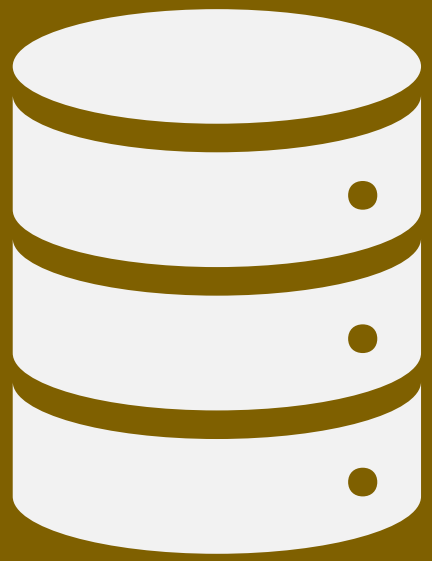
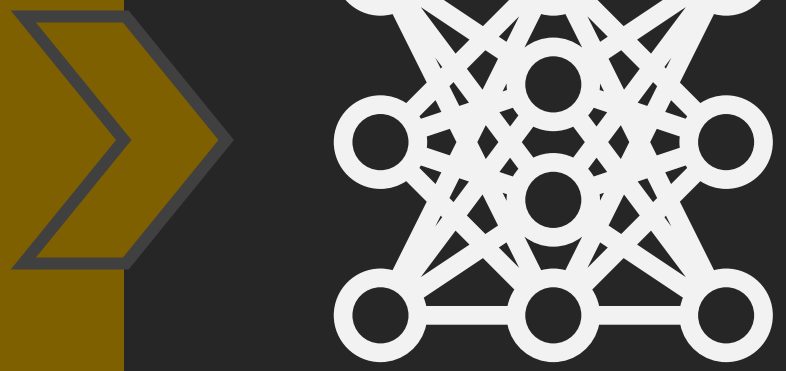
@arnaiztech

DATA

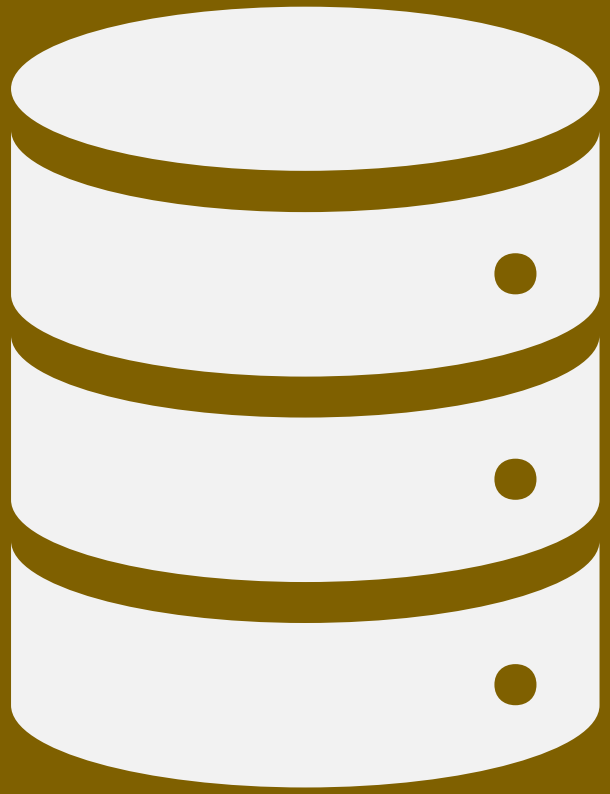
MODEL

DECISION



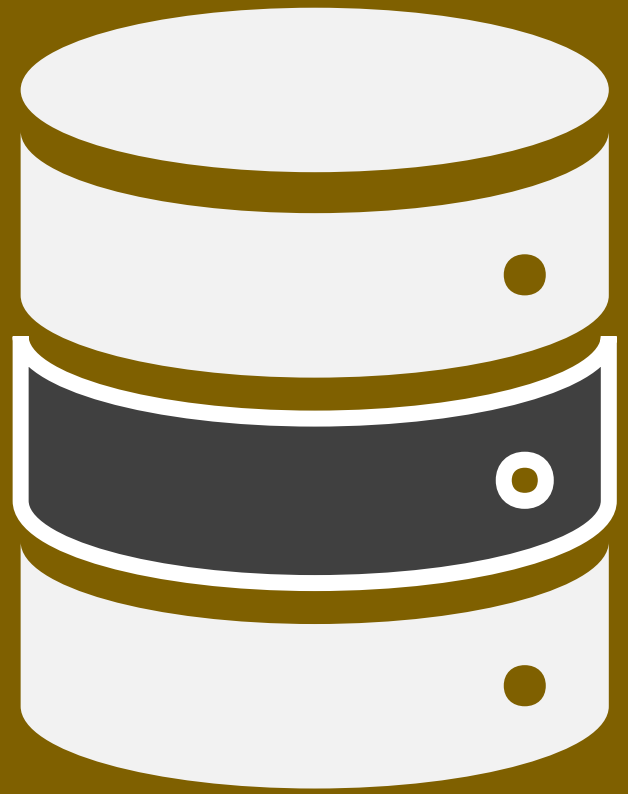


DATA



Modify data
to avoid discrimination

DATA



Is each datapoint equally important?

How much each individual datapoint contributes to the model behavior?

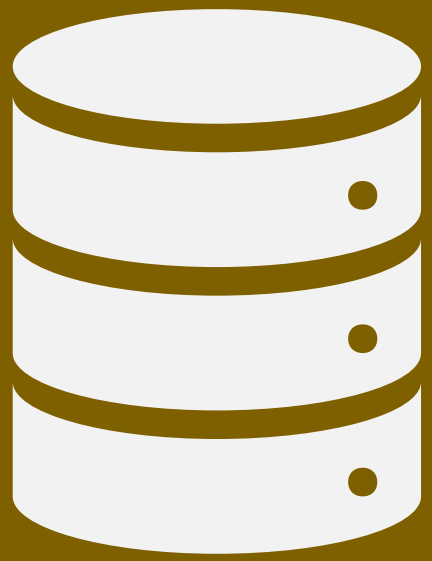
The Value of Data leading to **Fair Data Valuation**

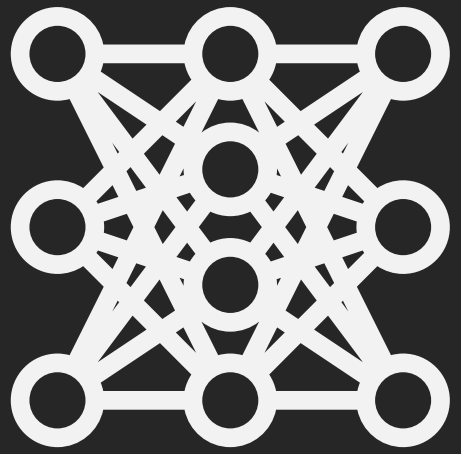
Adrian Arnaiz-Rodriguez and Nuria Oliver. "FairShap: A Data Re-weighting Approach for Algorithmic Fairness based on Shapley Values." 2023.

DATA

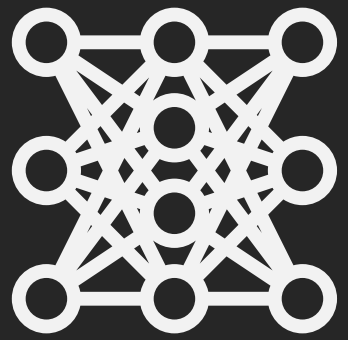
MODEL

DECISION





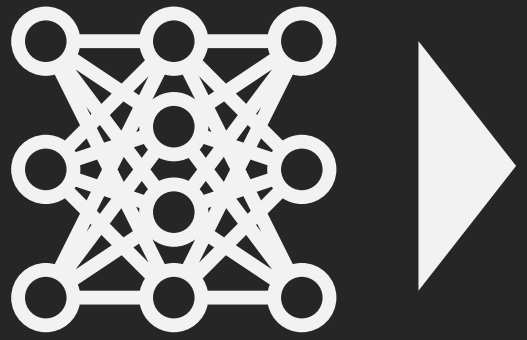
MODEL



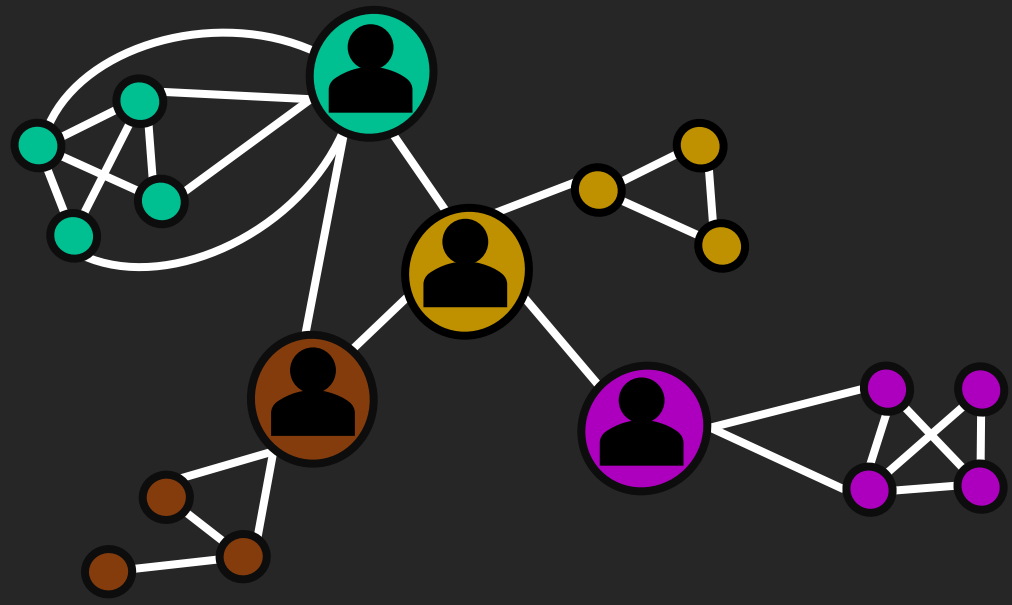
IMPOSE MATHEMATICAL RESTRICTIONS
ON THE LEARNING PROCESS

MODEL

Decision makers care not only how I am, but **how I relate** to others



Decisions on people
Shaping its relations



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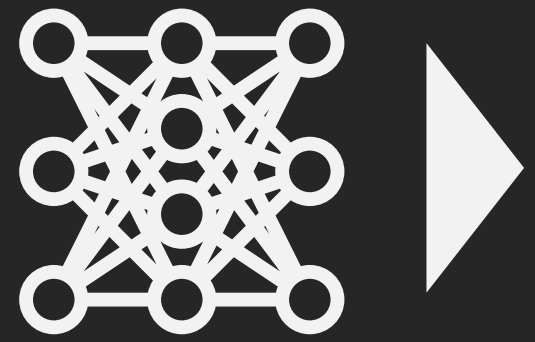
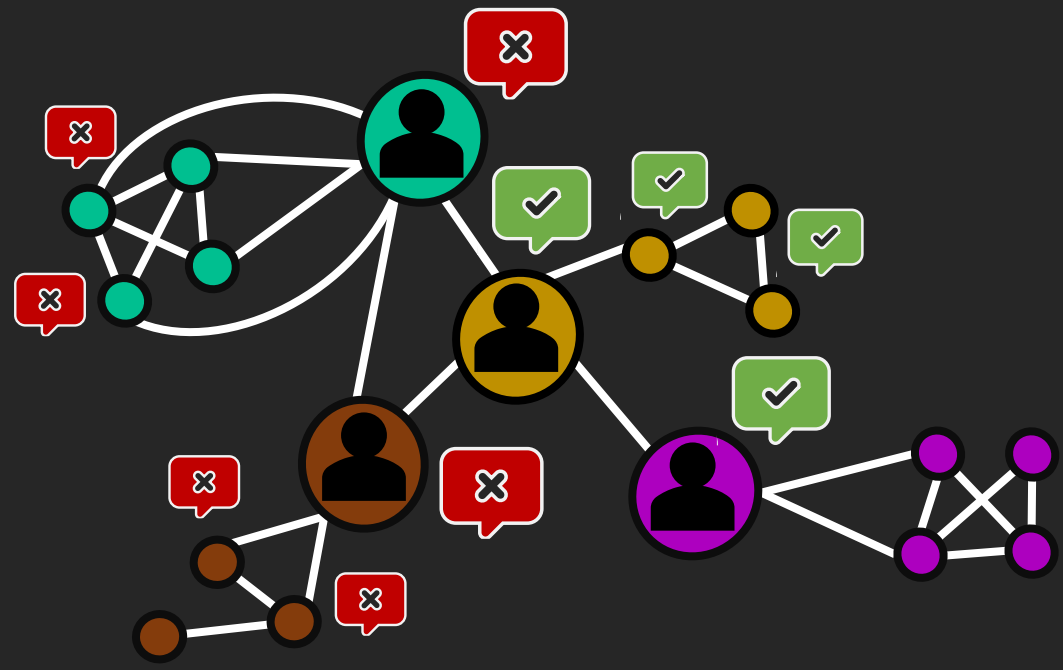


Decisions on people

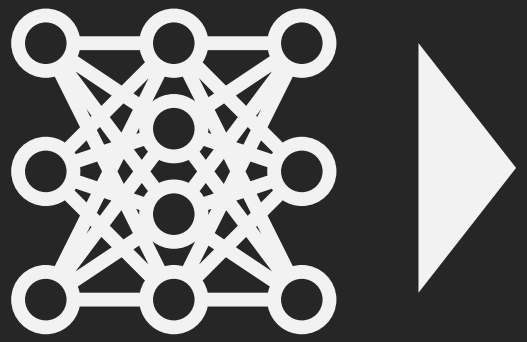
Shaping its relations



Socially influence decisions might be biased due to **homophilic** behavior

MODEL

Decision makers care not only how I am, but **how I relate** to others



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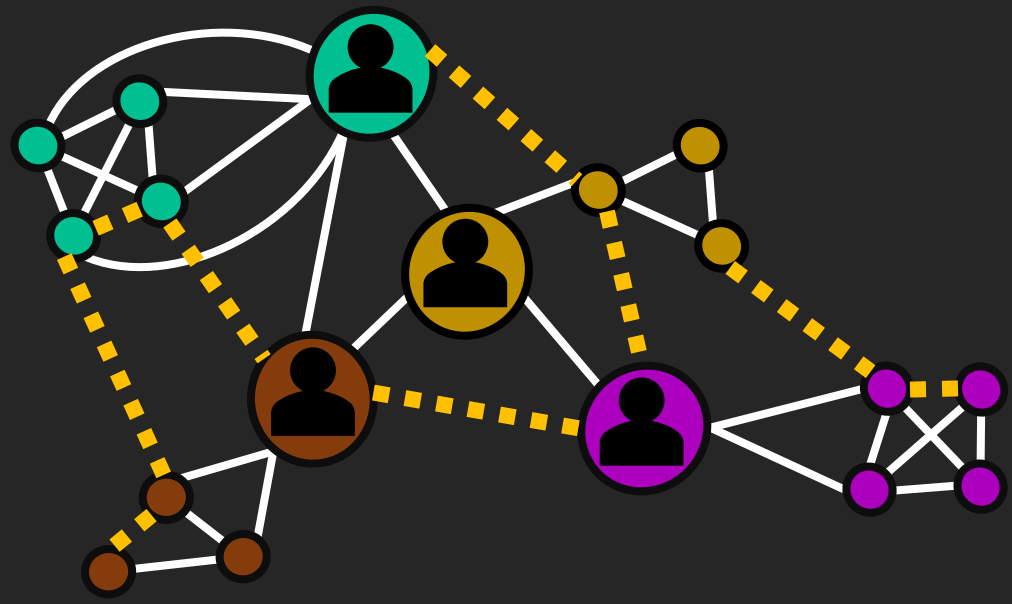


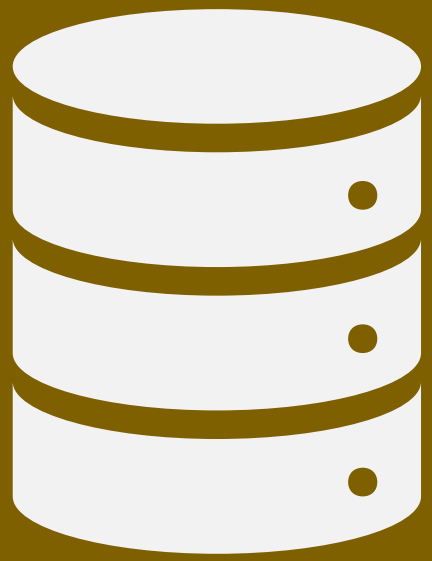
Polarization and Disparate Access to Information (**Social Capital**)

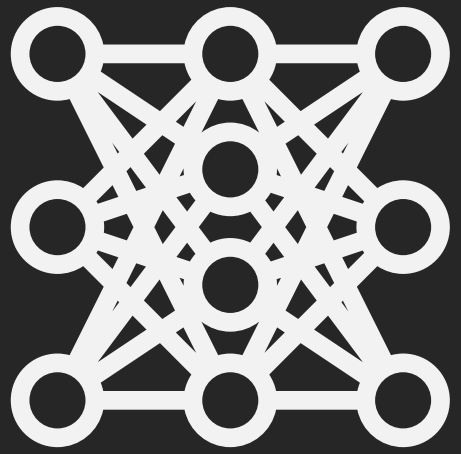
Georgina Curto, Adrian Arnaiz-Rodriguez, and Nuria Oliver. "Algorithms for Social Justice: Affirmative Action in Social Networks." 2023

DATA

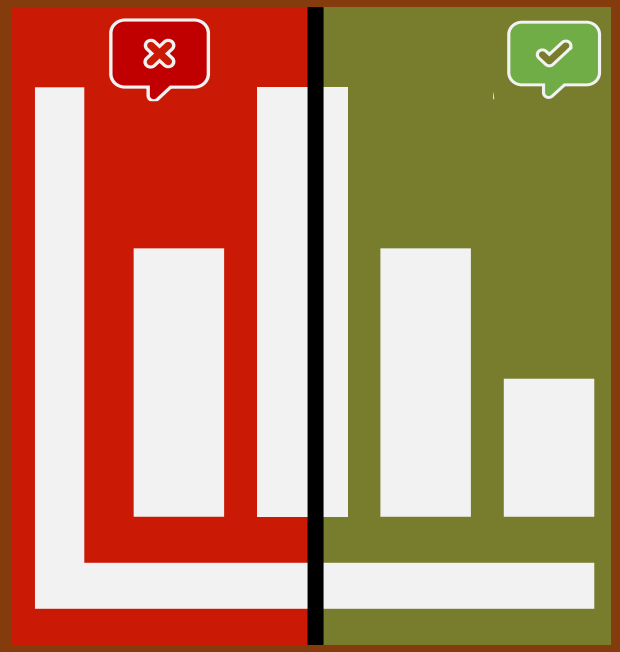
MODEL

DECISION

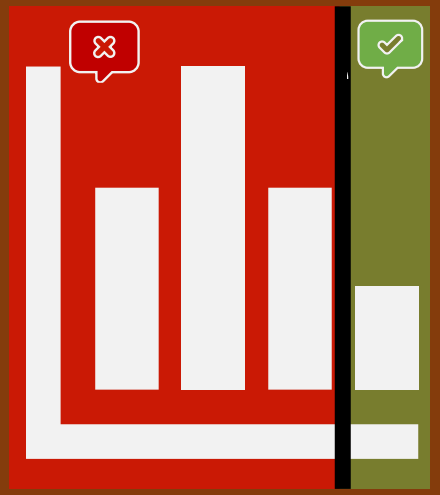


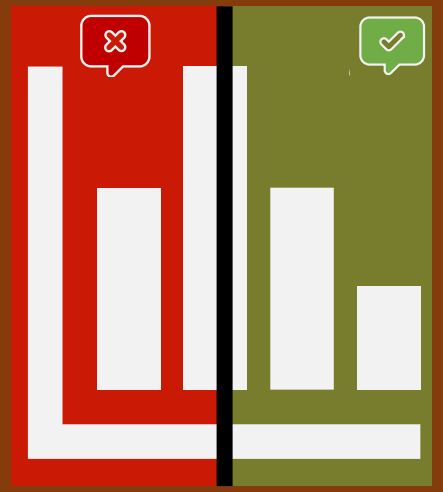


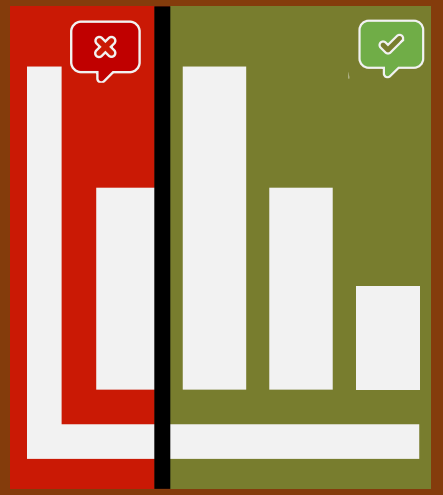
DECISION



DECISION







DECISION

Interaction with society

Societal meaning of
fair technical interventions

Long term effects

Gamifying dynamics

Policy-makers connection

AI ACT

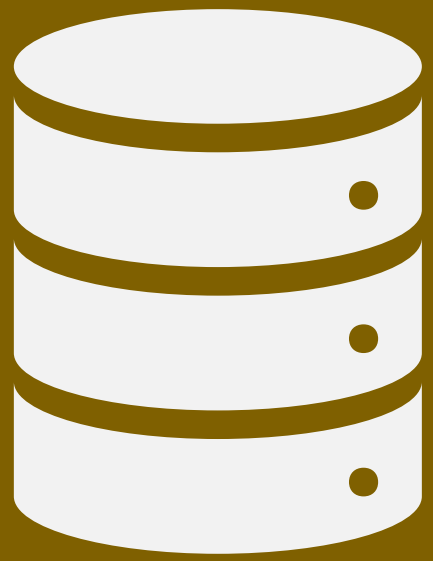
Align technique and law

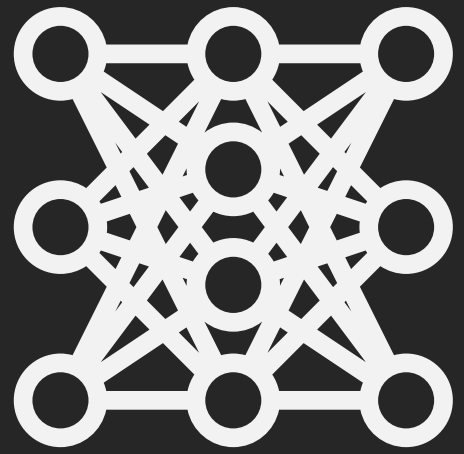
e.g. Causation and correlation
dilemma

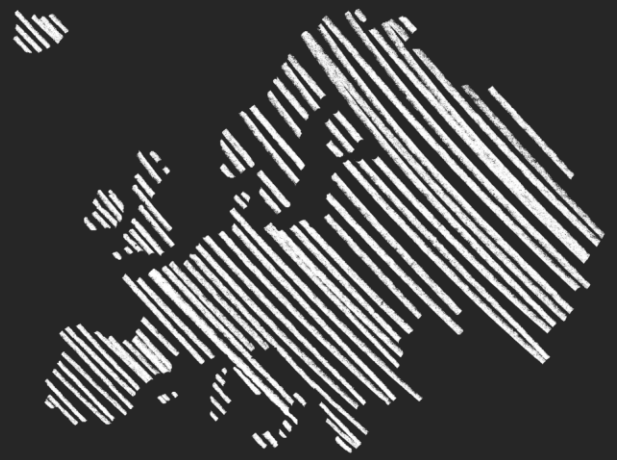
DATA

MODEL

DECISION







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