

Ethics of modelisation

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Session 5: Modelising Human



- 1 Define human (modeling) (*interactive*)
- 2 Ethical considerations when modeling

Outline

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What define us as **humans** ?

- Cognitive abilities
- Physical abilities
- Sociality (Social beings)
- Morality / Ethics
- ...

What do we want to model ?

- Human reasoning (argumentation / preferences elicitation)
- Neuron functioning (DL)
- Problem-solving (Optimisation)
- Decision-making
- Learning processes (ML, RL)
- Social behavior (Recommendation systems)
- Physical movement (Robotics)
- ...

Why do we **model** human?

To **predict** their behavior

- are they gonna repay their loan ?
- will they be interested in this product ?
- will they recidivate if released ?

To **learn** from them and reproduce well-founded decisions

- what is the best treatment for this disease ?
- where should we construct this route to optimize transit operations and service delivery ?

To **understand** human interactions

- how an information/opinion spread in social networks ?
- what are the most effective argumentation strategies ?

How does (predictive) modelling work ?

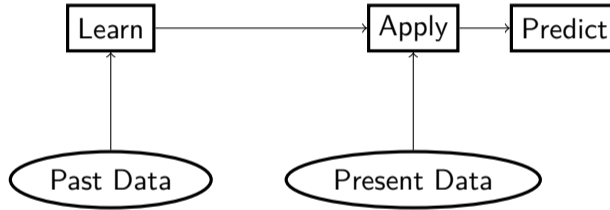


Figure: Predictive model

Fields that study human



Sociology



Anthropology



Psychology

"Humans" are diverse

Difference between social sciences and modeling:

- SS looks at society and consider groups in order to explain dynamics, how do they evolved into that (from past to present)
- Modeling use groups to classify (from past to future)



Modeling pitfall: categorization What problem it raises ?

The problem with demographic groups :

- sense of social belonging
- assumption on the relevance

The problem with behavioral segmentation:

- increase the power of capitalist institutions
- manipulation of the consumer
- reinforce stereotypes
- infringe on individuals' privacy rights and autonomy

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Agency of models

A model is an abstract, mathematical entity that belongs to the immaterial world

Immorality can arise either *before* modeling or *after* the modeling

- The purpose (the problem it is supposed to solve)
 - a model meant to increase the profits of a heroin dealer
 - profiling
- The consequences (impacts of the model's implementation)
 - discriminatory outcomes that exacerbate inequalities
 - reinforcement of biases
 - ethical dilemmas
 - overreliance

Avoid bad consequences

Humanity is subjective and culturally contingent, and different perspectives may emphasize different aspects of what it means to be human

What can we do ?

- Mitigate bias and prevent discrimination (fairness)
 - Ensure transparency and explainability
 - User empowerment and participation
- ⇒ Subjective fairness through explanations

Thank you for your participation !

Questions, suggestions, remarks ?