Mapping the Issue: Using Machine Learning for University Admission

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Goal: *To formulate guidelines for a bias-aware admission procedure, for academia, using artificial-intelligence.*

Method: *A qualitative review of the admission process, drawing from Socio-Technical methodologies.*

1 *Is there a problem at all?*

★ University of Texas, USA, 2013-2020:

"Using AI to determine which researchers to **recruit**"

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The system, called GRADE, only exacerbated existing bias and inequality.

★ UK during Covid-19, 2020:

"No school? Let's **predict** grades using AI."

↓

Grades were biased,
based on the school which students came from, rather than being derived from their own achievements.

2 *The ideal admission process:*

Define the organization's goals

Explicit:
- Successful students
- Advancing knowledge
- etc.

Implicit:
- Being fair
- Adhering to social norms
- etc.

Is the search biased?

Look for candidates

Rank the applicants

Is it feasible?

Is it fair?

What will contribute to the goals?

Conclude the process

Provide feedback to the applicants

Make the process transparent

3 *Recommendations for integrating AI in admission- an iterative process:*

Value Sensitive Design
Methodology

Conceptual investigation

Stakeholders:
- Applicants
- Admission staff
- Administration

Values:
- Fairness
- Transparency
- Scientific progress

Empirical investigation

Iteratively engage with stakeholders, review system versions.

Technical investigation

Which solution best solves the technical problem, while adhering to the social values?