Team

01.

Optimizing admissions criteria in the York University School of Medicine

How can a fair algorithm be developed to weight admission criteria for York University School of Medicine?

Admission to Canadian medical schools involves weightings that vary subjectively across institutions.



These subjective criteria create challenges in fairly assessing applicants and aligning selection decisions with long-term performance outcomes. The problem arises from the complexity of multidimensional applicant data, correlations between criteria, and limited access to outcome-based evidence, making it difficult for admissions committees to adopt systematic, data-driven weighting frameworks.

Methodology

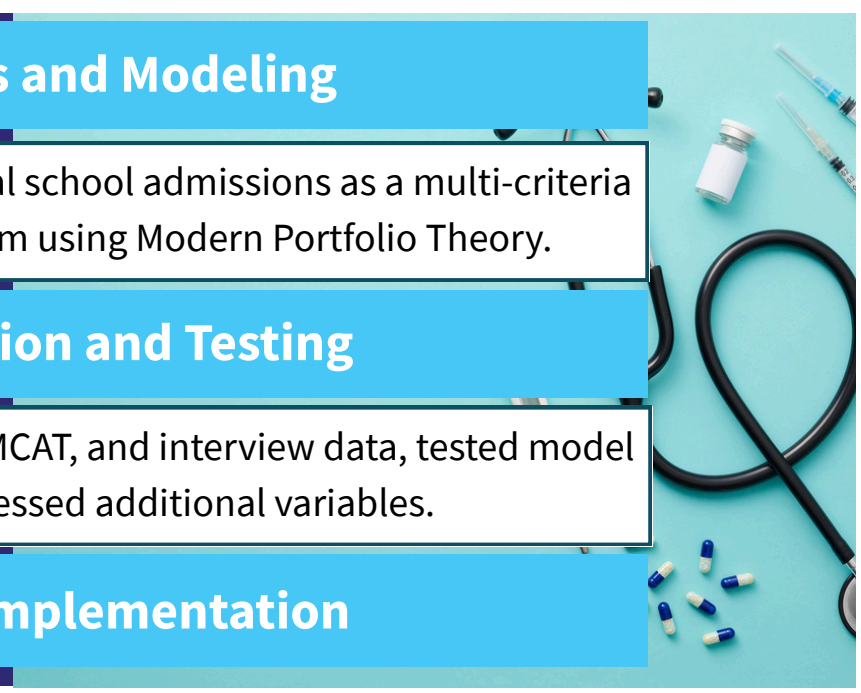
Step 1: Analysis and Modeling

- Reframed medical school admissions as a multi-criteria weighting problem using Modern Portfolio Theory.

Step 2: Simulation and Testing

- Simulated GPA, MCAT, and interview data, tested model stability, and assessed additional variables.

Step 3: Model Implementation



A collaborative project with:

UNIVERSITY OF TORONTO

YORK UNIVERSITÉ UNIVERSITY

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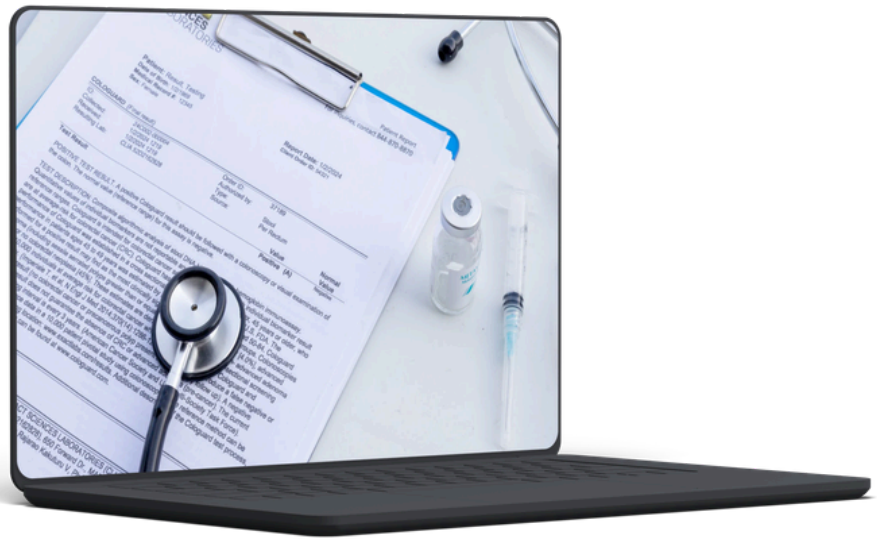
Insights

- Even without real institutional data, a well designed quantitative framework can remain practically useful when implemented as an extensible, outcome oriented decision support tool.
- Of note, findings revealed that **Modern Portfolio Theory (MPT)** is well suited for medical school admissions because it models correlated criteria and produces stable, interpretable weights even under data uncertainty.
- Adding Multiple Mini Interview (MMI), in person interview, and bio sketch scores shifted optimal weights intuitively, highlighting the role of correlation structures.

Recommendations

The team developed an **MPT-based framework and calculator-style website** to determine optimal admission criteria weights.

The solution promotes transparent, data-driven decision making and can be adapted as real admissions data and institutional priorities evolve.



Limitations

Lack of access to real admissions data limited empirical validation. Future research can incorporate institutional datasets, additional variables, and longitudinal outcomes to refine weight estimation.

Team 1

HAIVE 10

Risk and Insurance Studies Centre

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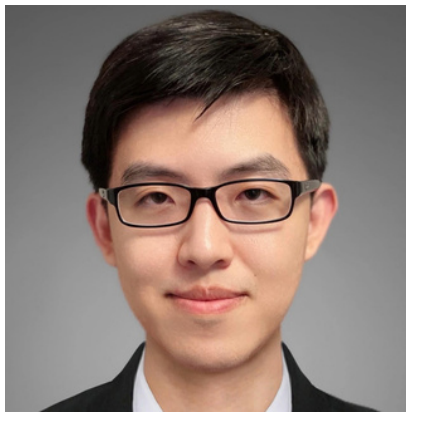
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