AUPN2025

2nd Annual Meeting • Baltimore, MD • Saturday, September 13th

AI for Medical Educators

Raymond Price, MD
Professor of Clinical Neurology
University of Pennsylvania

Overview

- Ways to use AI in Academia and Medical Education

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  - I am not talking about using AI for research or generation of novel ideas

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  - I am not talking about using AI for research or generation of novel ideas
  - Use of AI in common repetitive academic tasks

Outline

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  - Letters of recommendation
  - Referee evaluation
  - Screening of residency applicants

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- Residency positions for medical students
- Drafting letters for yourself for division chiefs/Chairs for Grants/Award/Promotion
- Promotion review of peers at other institutions

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  - The prompt should include:
    - Context
    - Data (CV)
    - Specific Instructions
      - What to emphasize
      - Desired Output

Letters of Recommendation

Using Generative Artificial Intelligence When Writing Letters of Recommendation

Academic Medicine. 100(7):769-775, 2025 Jul 01

I am an Associate Professor of Pathology at Harvard Medical School with 15 years of experience in obstetrical pathology and have worked with Jill Jones for the past 3 years as a collaborator in her work on the natural history of invasive choriocarcinoma.

I have worked with dozens of early career faculty, and she rates amongst the best.

Context

Letters of Recommendation

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Write a letter of recommendation for Jill Jones for her promotion from Assistant Professor to Associate Professor at the University of North Carolina at Chapel Hill that should convey that she is a national expert in gestational trophoblastic disease.

Emphasize her extensive research prowess as exemplified by over 20 publications in her field.

Include in this letter a paragraph about her early career research awards including [paste from CV].

Use a formal tone in this letter similar to the one used in this example letter: [paste prior letter or other writing samples].

Instruction | Input Data | Output Indicator

Letters of Recommendation

Using Generative Artificial Intelligence When Writing Letters of Recommendation

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An example of our disclosure is:

> I use AI to assist in writing all my letters of recommendation and do so because I believe it creates a better reflection of my thoughts on each applicant. Portions of this letter were written in conjunction with the assistance of [AI program] to ensure consistency of letter tone and content specific to [applicant name] and for minimization of unconscious bias. All AI-generated portions have been reviewed and checked for accuracy by me as the undersigned.

Letters of Recommendation

- Is a disclosure necessary?
- Is there something about using an AI-generated template that is different than using a template/draft provided by the candidate?

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Residency Recruitment

Personal Statements

Residency Application Selection Committee Discriminatory Ability in Identifying Artificial Intelligence- Generated Personal Statements

Issam Koleilat, MD MPH,*, Advaith Bongu, MD,† Sumy Chang, MD,* Dylan Nieman, MD,† Steven Priolo, MD,* and Nell Maloney Patel, MD†

Journal of Surgical Education. 81(6):780-785, 2024.

Residency Recruitment

Letters of recommendation

Can Artificial Intelligence Deceive Residency Committees? A Randomized Multicenter Analysis of Letters of Recommendation

Journal of the American Academy of Orthopaedic Surgeons. 33(6):e348-e355, 2025

ABSTRACT

Methods: In a multicenter, single-blind trial, a total of 45 LORs (15 human, 15 ChatGPT, and 15 Google BARD) were curated. In a random fashion, seven faculty reviewers from four residency programs were asked to grade each of the 45 LORs based on the 11 characteristics outlined in the American Orthopaedic Associations standardized LOR, as well as a 1 to 10 scale on how they would rank the applicant, their desire of having the applicant in the program,

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Table 2. Tests of Significance: Human Versus Artificial Intelligence

Factor or Variable	Human	AI	*P*
Perceived rank	5.96 ± 2.39	5.92 ± 2.43	0.882
Desire to have applicant	5.35 ± 2.72	5.37 ± 2.52	0.951

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Conclusion: Faculty members were unsuccessful in determining the difference between human-generated and AI-generated LORs 50% of the time, which suggests that AI can generate LORs similarly to human authors. This highlights the importance for selection committees to reconsider the role and influence of LORs on residency applications.

Personal Statement Review?

Residency Recruitment

Personal Statements

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TABLE 2. Personal Statement Evaluation Results by Author Source. AI, artificial intelligence

	Human Author	AI Author	p-value
n	16	36	
Interview Recommendation			
Definitely Interview	11 (69)	16 (44)	0.2211
Backup Interview List	3 (19)	16 (44)	
Definitely Not	2 (13)	4 (11)	
Rank Recommendation			
Top Third	4 (25)	8 (22)	0.9223
Middle Third	6 (38)	13 (36)	
Bottom Third	4 (25)	12 (33)	
Do Not Rank	2 (13)	3 (8)	

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    - Honors inflation
    - H/HP/P/F without distributions provided

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  - Dean's letters
    - Without class ranks
    - Reviewed/edited by students

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    - Reviewed/edited by students
  - Pass/Fail Step 1 scores
  - Letter of recommendation praise inflation

Residency Application Screening

- With AI, resident application screening will become even more challenging due to:
  - Further letter of recommendation praise inflation
  - Personal statements that may not reflect the applicant's writing, reasoning, or creativity

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Residency Recruitment

Development and Validation of a Machine Learning-Based Decision Support Tool for Residency Applicant Screening and Review

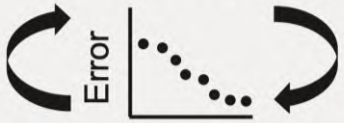
Academic Medicine. 96(11S):S54-S61, 2021

Applicant Data Download

ERAS: 2018, 2019, & 2020 cycles
8,243 applicants
1,235 interview invites

Model Selection & Tuning

80% of dataset (Training Data)
LR, RF, LightGBM, XGBoost



10-fold cross-validation

Performance Assessment

20% of dataset (Validation Data)

Decision Support Tool

Invite

Not invite

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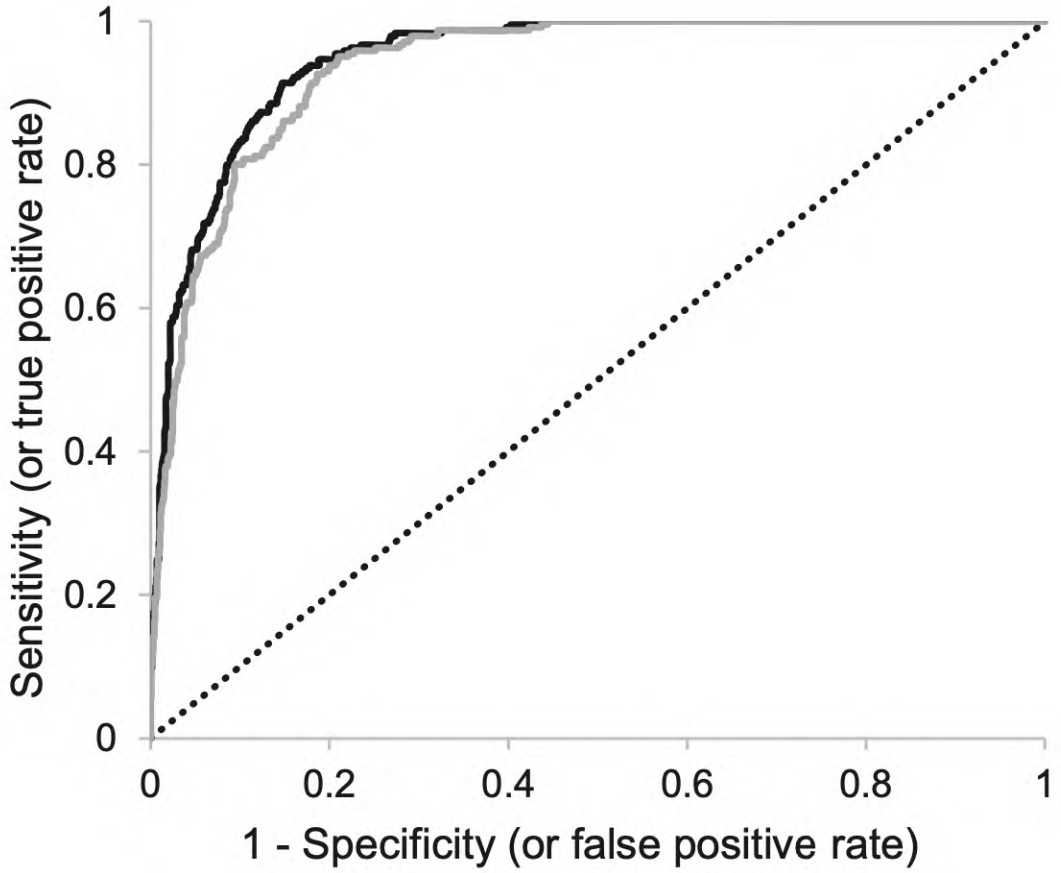

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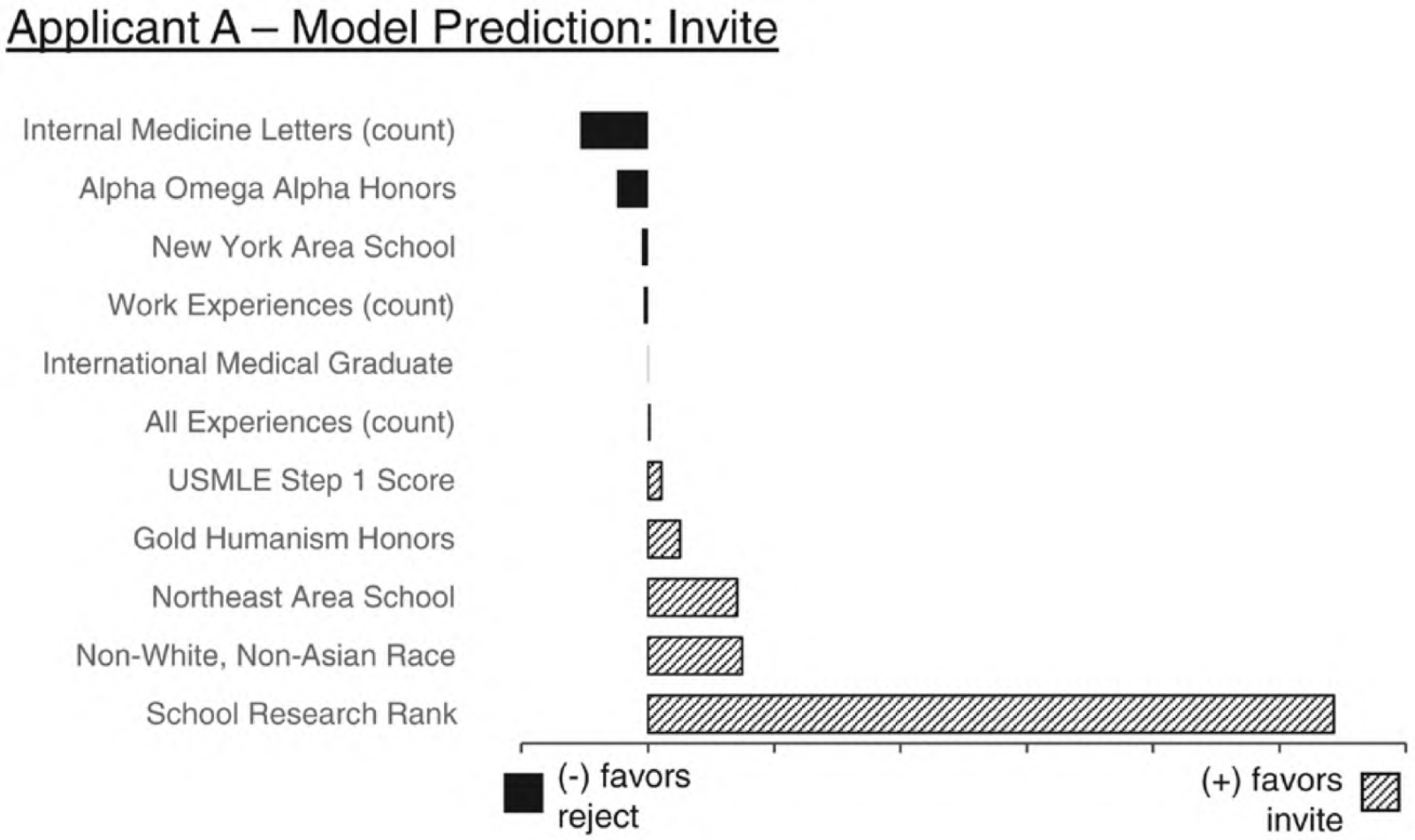

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  - Spend more time reviewing the applications of applicants near their threshold for an interview
  - Identify unconscious biases in their screening process

Discussion