

Artificial intelligence

Citation for published version (APA):

Groot Lipman, K. B. W. (2024). *Artificial intelligence: the key to standardizing respiratory disease evaluation*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20240122kg>

Document status and date:

Published: 01/01/2024

DOI:

[10.26481/dis.20240122kg](https://doi.org/10.26481/dis.20240122kg)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

PROPOSITIONS

ARTIFICIAL INTELLIGENCE: THE KEY TO STANDARDIZING RESPIRATORY DISEASE EVALUATION

1. The clinical trial of tomorrow consists of tumor response evaluation with AI-based volume measurements -- this thesis

2. In tumor response evaluation, consistency in measurement over time points is of utmost importance -- this thesis

3. External validation is not the holy grail if annotation protocols are substantially different -- this thesis

4. There is a pressing need for more research into the validation and implementation of AI -- this thesis

5. We should stop calling annotations that contain interobserver variability 'Ground Truth'

6. A gold standard, specifically in medicine, does not mean it is good nor objective; it is merely the best we currently have under reasonable constraints, and we should question its relevance with more skepticism

7. Goodhart's Law -- When a measure becomes a target, it ceases to be a good measure -- is especially applicable to AI in medicine

8. AI versus humans is not the debate we should be having, but rather how to extract the maximum value AI and humans together can offer

9. Sooner than later, AI will be consistently outperforming humans, and we should have novel evaluation methods in place to assess superhuman performances

10. AI in medicine will enable more accurate and standardized measurements across disciplines, improving patient care and the evaluation of new treatments.