

Supervised machine learning in psychiatry

Citation for published version (APA):

Grassi, M. (2022). *Supervised machine learning in psychiatry: towards application in clinical practice*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20220919mg>

Document status and date:

Published: 01/01/2022

DOI:

[10.26481/dis.20220919mg](https://doi.org/10.26481/dis.20220919mg)

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.

SUPERVISED MACHINE LEARNING IN PSYCHIATRY: TOWARDS APPLICATION IN CLINICAL PRACTICE

Massimiliano Grassi
19th of September 2022

Propositions

1. The Personalize Medicine paradigm can help to improve the effectiveness of psychiatric treatments and the prevention of Mental Disorders.
2. Psychiatry must begin to better exploit the possibilities opened by recent technological advancements.
3. The introduction of clinical decision support systems in Psychiatry would allow clinicians to improve the decisions they take in clinical practice.
4. The interest in Psychiatry for Machine Learning (i.e., Artificial Intelligence) needs to be ultimately directed to develop clinical tools.
5. Supervised Machine Learning algorithms should be developed to use input information that can be cost-effectively collected in clinical practice.
6. Introducing the principles of Supervised Machine Learning to mental health clinicians and addressing their potential resistance is necessary to achieve the application of Supervised Machine Learning in clinical practice.
7. A coordinated effort between the academia, industry, clinicians, and patients is necessary to develop useful clinical tools based on Supervised Machine Learning algorithms.
8. Supervised Machine Learning algorithms can significantly contribute to making Personalized Medicine a reality in psychiatric clinical practice.
9. We should not judge the decision-making performance of Artificial Intelligence systems more severely than how we judge the performance of human decision-making.
10. The labor market is drastically changing due to a massive introduction of automatization and Artificial Intelligence, with a serious risk of unemployment for several categories of workers.