

Editorial

# Introducing JMIR AI

Khaled El Emam<sup>1</sup>, BEng, PhD; Bradley Malin<sup>2</sup>, BA, MSc, PhD

<sup>1</sup>School of Epidemiology and Public Health, University of Ottawa, Ottawa, ON, Canada

<sup>2</sup>Department of Biomedical Informatics, Vanderbilt University, Nashville, TN, United States

**Corresponding Author:**

Khaled El Emam, BEng, PhD

School of Epidemiology and Public Health

University of Ottawa

401 Smyth Road

Ottawa, ON, K1H 8L1

Canada

Phone: 1 613 737 7600

Email: [kelemam@ehealthinformation.ca](mailto:kelemam@ehealthinformation.ca)

## Abstract

JMIR AI is a new journal with a focus on publishing applied artificial intelligence and machine learning research. This editorial provides an overview of the primary objectives, the focus areas of the journal, and the types of articles that are within scope.

(*JMIR AI 2022;1(1):e42046*) doi: [10.2196/42046](https://doi.org/10.2196/42046)

**KEYWORDS**

artificial intelligence; AI; machine learning; methodology

The past decade has witnessed rapid growth in the development of artificial intelligence and machine learning (AI/ML) methods for biomedical research and clinical applications. At the same time, it has become clear that the translation of such methods into practice has met numerous challenges. This is perhaps best exemplified by the status of AI/ML work during the COVID-19 pandemic. The pandemic was one moment in time where powerful AI/ML-driven diagnostic and prognostic tools could have accelerated our understanding and development of effective treatments. With some notable exceptions [1], and despite many publications, the impact of AI/ML in practice has been limited [2,3]. The reasons are varied [4-6], such as a lack of representation in the populations to whom the data corresponds and poor quality in the data available, leading to a lack of generalizable methodologies and models and a lingering lack of trust in automated decision-making. In this respect, our main motivation for JMIR AI is to publish articles that focus on the practical issues involved in developing useful AI/ML solutions and implementing them in biomedical research and clinical settings.

At the same time, we are seeing the introduction of policies and statutes in disparate jurisdictions to regulate AI/ML systems [7,8]. These policies and statutes are being developed in anticipation of an AI-laden future. Yet, as with all policy-making, such activities are likely to impact data access, the definition of fit-for-use data, algorithmic explainability and transparency, patient access to data and decision justifications,

and the need for continuous evaluation of models in clinical settings, to name a few.

JMIR AI aims to become a venue for identifying, discussing, and addressing such practical challenges, with a particular emphasis on applications. The journal will strive to publish technical articles, as well as those tackling societal aspects, including ethical, legal, policy, and regulatory issues. This will be accomplished through a mix of research, perspectives, tutorials, and articles describing benchmark data sets. By leveraging JMIR Publications' publishing processes and tools, we also expect to have a rigorous and rapid open access review and publication process.

To realize this vision, we are assembling a multidisciplinary editorial board covering a wide array of topics from academia and industry, as well as ensuring broad domain and regional representation. The founding members of the editorial board cover many years working in academic medical centers and with spin-off health technology companies, as well as working with and within the pharmaceutical and medical device industries. Given the continued rapid advancement of this multidisciplinary field, we intend to continue expanding the editorial board to cover relevant areas as they arise.

We also intend to use the journal as a platform to enable and facilitate code and data sharing. This will be achieved by providing authors with additional tools that address the many technical and regulatory obstacles to broader community sharing.

## Conflicts of Interest

None declared.

## References

1. Adams R, Henry KE, Sridharan A, Soleimani H, Zhan A, Rawat N, et al. Prospective, multi-site study of patient outcomes after implementation of the TREWS machine learning-based early warning system for sepsis. *Nat Med* 2022 Jul;28(7):1455-1460. [doi: [10.1038/s41591-022-01894-0](https://doi.org/10.1038/s41591-022-01894-0)] [Medline: [35864252](https://pubmed.ncbi.nlm.nih.gov/35864252/)]
2. Roberts M, Driggs D, Thorpe M, Gilbey J, Yeung M, Ursprung S, et al. Common pitfalls and recommendations for using machine learning to detect and prognosticate for COVID-19 using chest radiographs and CT scans. *Nat Mach Intell* 2021 Mar 15;3(3):199-217. [doi: [10.1038/s42256-021-00307-0](https://doi.org/10.1038/s42256-021-00307-0)]
3. Wynants L, Van Calster B, Collins GS, Riley RD, Heinze G, Schuit E, et al. Prediction models for diagnosis and prognosis of covid-19: systematic review and critical appraisal. *BMJ* 2020 Apr 07;369:m1328 [FREE Full text] [doi: [10.1136/bmj.m1328](https://doi.org/10.1136/bmj.m1328)] [Medline: [32265220](https://pubmed.ncbi.nlm.nih.gov/32265220/)]
4. Ghassemi M, Oakden-Rayner L, Beam A. The false hope of current approaches to explainable artificial intelligence in health care. *Lancet Digit Health* 2021 Nov;3(11):e745-e750. [doi: [10.1016/S2589-7500\(21\)00208-9](https://doi.org/10.1016/S2589-7500(21)00208-9)]
5. Petersson L, Larsson I, Nygren JM, Nilsen P, Neher M, Reed JE, et al. Challenges to implementing artificial intelligence in healthcare: a qualitative interview study with healthcare leaders in Sweden. *BMC Health Serv Res* 2022 Jul 01;22(1):850 [FREE Full text] [doi: [10.1186/s12913-022-08215-8](https://doi.org/10.1186/s12913-022-08215-8)] [Medline: [35778736](https://pubmed.ncbi.nlm.nih.gov/35778736/)]
6. Wadden JJ. Defining the undefinable: the black box problem in healthcare artificial intelligence. *J Med Ethics* 2021 Jul 21. [doi: [10.1136/medethics-2021-107529](https://doi.org/10.1136/medethics-2021-107529)] [Medline: [34290113](https://pubmed.ncbi.nlm.nih.gov/34290113/)]
7. Good machine learning practice for medical device development: guiding principle. Food and Drug Administration. 2021 Oct. URL: <https://www.fda.gov/medical-devices/software-medical-device-samd/good-machine-learning-practice-medical-device-development-guiding-principles> [accessed 2022-08-11]
8. Kop M. EU artificial intelligence act: the European approach to AI. Stanford - Vienna Transatlantic Technology Law Forum, Transatlantic Antitrust and IPR Developments, Stanford University. 2021 Oct 01. URL: <https://law.stanford.edu/publications/eu-artificial-intelligence-act-the-european-approach-to-ai/> [accessed 2022-08-13]

## Abbreviations

**AI/ML:** artificial intelligence and machine learning

*Edited by T Leung; this is a non-peer-reviewed article. Submitted 19.08.22; accepted 22.08.22; published 20.09.22.*

*Please cite as:*

*El Emam K, Malin B*

*Introducing JMIR AI*

*JMIR AI 2022;1(1):e42046*

*URL: <https://ai.jmir.org/2022/1/e42046>*

*doi: [10.2196/42046](https://doi.org/10.2196/42046)*

*PMID:*

©Khaled El Emam, Bradley Malin. Originally published in JMIR AI (<https://ai.jmir.org>), 20.09.2022. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work, first published in JMIR AI, is properly cited. The complete bibliographic information, a link to the original publication on <https://www.ai.jmir.org/>, as well as this copyright and license information must be included.