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Medical Informatics Meets Medical Ethics

Ever since the advent of computers, the tendency to delegate tasks to machines has been prevalent also in the clinic. Artificial intelligence already helps medical staff with a multitude of different tasks, including precision dosing, predicting long-term therapeutic outcomes, and interpreting medical images. Genuinely ethical tasks have so far been excluded from automatisation.

With the COVID-19 pandemic, however, the need for the taking of thousands of morally relevant decisions within short time frames has arisen. Expanding the use of artificial intelligence into the realm of clinical ethics suddenly seems a worthwhile enterprise.

In the past months, our interdisciplinary team of engineers and ethicists have developed the world's first functional ethical advisory system for clinical application. Results were published as a Target Article in the American Journal of Bioethics and have sparked off a lively international debate (https://www.tandfonline.com/doi/full/10.1080/15265161.2022.2040647). Preliminary performance results are promising: the algorithm's recommendations do not deviate significantly from those of human ethicists. I will begin this talk with an analysis of the different moral frameworks on which an ethical advisor system could be based and explain how we used machine learning to incorporate Beauchamp and Childress' prima-facie principles. I shall show how we acquired suitable training data, designed the input categories and user interface, and captured the parameters of individual medical cases.

That one *can* do something, however, does not imply that one also *should*: the basic technological means now exist to aid bioethical decision-making; but should we really entrust this sensitive domain to artificial intelligence? Most people will find the prospect of autonomously driving vehicles taking morally relevant decisions in situations of unavoidable harm easier to accept than having judgments in clinical settings made by artificial intelligence – even if we assumed that they would result in comparatively great harms or benefits. I will therefore conclude by reflecting on the profound impact on medical ethics that new technologies of this kind are likely to have.

Der Vortrag kann wahlweise auf Deutsch oder auf Englisch gehalten werden!

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