

Research Area: Machine Learning for healthcare

Brief Description and importance of the Research Area in recent context.

The complexity and rise of data in healthcare means that Machine learning will increasingly be applied within the field. It also seems increasingly clear that ML systems will not replace human clinicians on a large scale, but rather will augment their efforts to care for patients. Several types of ML models are already being employed by payers and providers of care, and life sciences companies. The key categories of applications involve diagnosis and treatment recommendations, patient engagement and adherence, and administrative activities. We believe that ML has an important role to play in the healthcare offerings of the future. In the form of ML, it is the primary capability behind the development of precision medicine, widely agreed to be a sorely needed advance in care. Although early efforts at providing diagnosis and treatment recommendations have proven challenging, we expect that ML will ultimately master that domain as well. Given the rapid advances in ML for imaging analysis, it seems likely that most radiology and pathology images will be examined at some point by a machine. Speech and text recognition are already employed for tasks like patient communication and capture of clinical notes, and their usage will increase. The greatest challenge to ML in these healthcare domains is not whether the technologies will be capable enough to be useful, but rather ensuring their adoption in daily clinical practice. The Opportunities Machine Learning for Healthcare Provides: First, it allows healthcare professionals to focus on patient care rather than spend their time on information search or entry. The second important role of machine learning in healthcare is the increase of diagnosing accuracy.