

# Psychological Assessment in the Era of Artificial Intelligence

## Abstract

Currently, assessments in health care are primarily physical or biological in nature. Scalable psychological information is mostly limited to subjective reports or low-precision questionnaires. Over the last couple of decades and for the first time in human history, a substantial portion of our daily language behavior are digitally recorded. With care taken for privacy and security, this "digital phenotype" could transform psychological assessments and decisions in health care that can ultimately save lives. However, most of our techniques in AI for analyzing language do not model the person behind the words, or optimize toward their psychological well-being.

In this talk, I will present a case for the power of the digital phenotype, combined with AI, to assess psychological attributes and future health-related behaviors with often unprecedented performance. I will discuss work combining ideas from AI and psychometrics for tasks such as predicting a diagnosis of depression, the future trajectory of PTSD symptoms, and future likelihood of relapse in addiction treatment, and community opioid mortality. I will then discuss work towards breaking down the limitations in AI (and the subfield of Natural Language Processing) to model human data as if it was generated by humans: the need for longitudinal techniques, multi-level modeling of language's social context, as well as establishing multi-disciplinary validity norms. Overall, I suggest a path toward overcoming these challenges will ultimately enable a more robust and powerful AI-based digital phenotype, capable of saving lives.