Making the Unique Capabilities of Machine Learning Work for Behavioral Programming

Background:

Behavior Integration requires analyzing factors influencing priority behaviors using qualitative data, and then analyzing the factors often across multiple behaviors to find similarities and differences important to draw out in the strategy. Because of the volume of data involved, conducting this cross-analysis can be burdensome. Machine learning (ML) is the scientific study of algorithms and statistical models that computer systems use to perform a specific task without using explicit instructions, relying on patterns and inference instead. ACCELERATE leveraged ML to summarize research done on factors influencing a program's priority behaviors to identify patterns and commonalities, ultimately assisting programmers with strategy development. ACCELERATE's ML-powered Summarize Tool allows health programmers to quickly deal with several behaviors at once and synthesize qualitative data on factors, supporting actors and strategies influencing these behaviors to develop a strong behaviorally-focused strategy. The Summarize Tool has been used successfully to create both a broad development strategy as well as more focused project strategy.

Key Activities and Outputs:

As ACCELERATE's USAID partners began using Think | BIG by identifying priority behaviors and then creating Behavior Profiles for each, it became clear that the synthesis across Profiles to identify areas of commonality among them or unique needs within them was necessary to create cross-cutting behavioral programming. With each team typically identifying eight to twelve behaviors, each with 64 to 96 different critical factors affecting adoption of these behaviors, this synthesis was time-consuming and difficult. ACCELERATE created the Summarize Tool using ML to pull qualitative data from previously-analyzed priority behaviors. The Summarize Tool can pull the information from any number of analyzed behaviors and group factor, supporting actor and strategy information according to the behavioral typology algorithms it has been trained to use. As the tool gathers more information, it learns to improve its sorting and grouping ability. The tool also allows for merging of information once appropriate groupings have been determined. ACCELERATE's ML-based Summarize Tool has been used by the USAID West Africa Regional Mission (WARHO), by all technical offices in the USAID Ghana Mission, and by a USAID-funded project in Ghana.

WARHO use of the Summarize Tool allowed the team to identify factors that cut across priority health, development, and WARHO team behaviors in less than half a day, and to apply this thinking to a behaviorally-focused five-year sub-strategy. USAID Ghana used the Summarize Tool to develop a fully-integrated, behavior-focused CDCS Results Framework, with all teams aligned to common behavioral goals across all technical areas. And the USAID-funded project in Ghana used the Summarize Tool to easily add new behaviors to an existing strategy late in the project.

Key Learning:

Using an ML tool saves time. It allows programmers to process large sets of qualitative data critical to ensuring behaviors are adequately represented in less than one minute, instead of the several hours it would take to accomplish this manually. But more importantly, ML provides the space and time for the critical thinking essential to a program that will achieve behavioral outcomes. ML should be used to take behavioral programming to the next level by simplifying the complex process of analyzing multiple behaviors, often across multiple sectors, into one cohesive strategy.