# How AIM-AHEAD Can Benefit Native Communities

What is AIM-AHEAD?

AIM-AHEAD (Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher Diversity) is a program created by the National Institutes of Health to increase the participation and representation of researchers and communities currently underrepresented in the development of AI/ML models to understand and address their community's health needs.

What is AI?

Artificial intelligence (AI) is a wide-ranging branch of computer science. It works to build machines and computer programs that perform tasks that would normally require human intelligence. For example, when you use a navigation app on your phone, AI decides the best route to follow. In other words, AI is behind any device solving a problem that typically requires human brainpower.
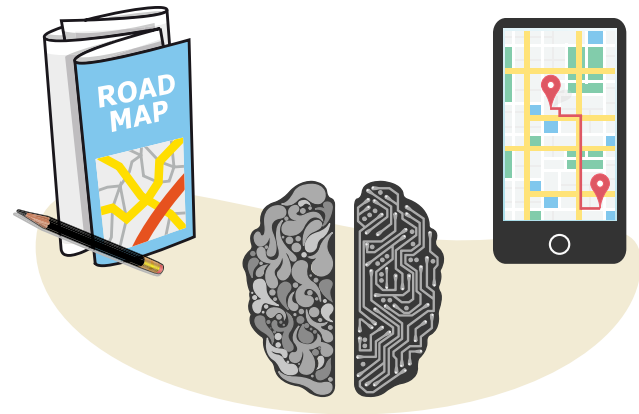
What is ML?

Machine Learning (ML) is an approach to AI that allows computers to learn from examples or experience automatically. Typically, a computer is given a ton of data and will use it to find patterns and then make predictions or decisions from what it learns. An example is a video feed on YouTube or news feed on Facebook. The videos or articles recommended to you are based on your past activity and those of others like you. ML interprets this information and recommends things it thinks you'll like. ML is often connected with the term "algorithm," which are instructions that follow a step-by-step process, and these are powerful tools used in many aspects of our increasingly digital lives.

What does EHR data have to do with AI/ML?

First off, electronic health records (EHR) are the electronic version of your medical records. More and more, doctors and health care organizations are using electronic records instead of paper records. This creates a lot of data that might be too messy to analyze using traditional methods but can be more easily studied using AI/ML technology. This is important to AIM-AHEAD as it creates the opportunity to research large and diverse groups of people and their health.
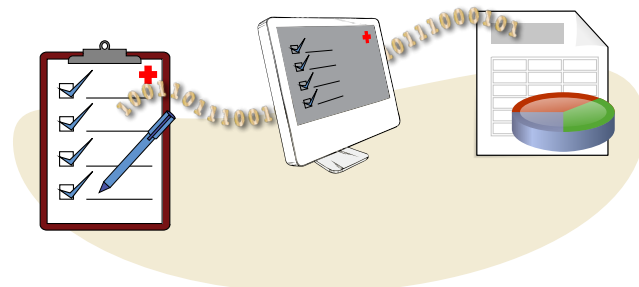
Why is it important to have diverse groups participate in this technology?

When we feed computer programs a lot of data, that data often includes human bias ("bias" means the attitudes or behaviors that favor one group or idea over another). This can be the result of inputting actual human opinions (with all their biases), like a computer program analyzing user comments from a website, or the result of not having enough representation in the data, such as human face analysis programs that depend mostly on only White faces. When the data itself is biased, the interpretations of the AI/ML programs can also be biased.

By increasing the number of diverse researchers and communities who participate in AI/ML technology, AIM-AHEAD hopes to confront and reduce bias in AI/ML programs. AIM-AHEAD also wants to bring the promise of this technology to communities who aren't currently benefiting from it.

How might AI/ML benefit the health of American Indian and Alaska Native communities?

Native communities suffer from a number of chronic diseases that could benefit from research that uses AI/ML methods. For example, Native communities are seeing an increase in the number of elders with Alzheimer's disease or related dementia (ADRD). AIM-AHEAD is funding studies that use data from the EHRs of Native patients and apply ML techniques to create algorithms to help detect ADRD early. By focusing on the medical records of Native patients, AIM-AHEAD researchers will be able to find patterns that may be specific to Native peoples, which hasn't been done previously. This may help doctors diagnose ADRD early and may help Native patients and caregivers plan for treatment.

Additionally, hospitals and health systems that have limited resources and fewer doctors, like rural hospitals or Indian Health Service facilities, may benefit from the use of AI/ML technology. More and more often, doctors are using AI/ML technology to review a patient's EHR to quickly spot indicators of disease and to make decisions about strategies for treatment. For example, AI/ML could flag a patient's glucose level as showing potential prediabetes or showing the patient's risk of complications from diabetes. AI/ML technology might then recommend to the doctor a course of action. This type of support, known as a clinical decision support system, can be applied to many health conditions that affect Native communities, including diabetes, cardiovascular disease, and mental health or substance use disorders.

Want to learn more?

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Want to get involved?

Join the AIM-AHEAD Consortium at aim-ahead.net

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