Theory of Change: AutoAI-Pandemics

Background	Problems	Solutions	Outcomes	Public/Users
Lessons learned from the COVID-19 pandemic outbreak point to the need to improve our preparedness for future similar events.	**Machine Learning (ML) requires advanced knowledge, limiting their use, by non-experts.**	To develop a user-friendly platform, called AutoAI-Pandemics, that can be effectively applied by non-experts working with infectious diseases.	**Data dashboard and Portals**	**Researchers and healthcare workers**
There are several open challenges for predicting possible epidemics, detecting variants, contact tracing, discovering new drugs, and fighting misinformation.	**The required technical background restricts the widespread use of ML by researchers and practitioners from other areas.**	This platform aims to democratize access to data science and ML techniques, providing the 3 solutions.	**Web-Based Application**	**Pharmaceutical industry and genomic organizations**
Artificial intelligence (AI), specifically Machine Learning (ML) algorithms, represents a valuable tool to reduce the impacts of a pandemic.		(T1) Automated epidemiologic analysis to detect possible epidemic scenarios and corresponding optimal intervention policies.	**Peer-Reviewed Articles**	**Policymakers and other stakeholders**
AI can provide tools to deal with these scenarios, having shown effective results in fighting infectious diseases.	**To the best of our knowledge, there are no end-to-end ML platforms for analysis, study, and control of epidemics and pandemics.**	(T2) Automated bioinformatics analysis, e.g., drug discovery or pathogen genome mining.	**Online Searchable Repository**	**International organizations, e.g., WHO and PAHO**
Nevertheless, designing robust and trustworthy solutions usually requires experts, causing severe inequalities.		(T3) Fighting misinformation/disinformation to assist in the search for reliable sources.	**Computational Tools**	**Ministry of health, state health departments**