AutoAI-Pandemics: Democratizing Machine Learning for Analysis, Study, and Control of Epidemics and Pandemics

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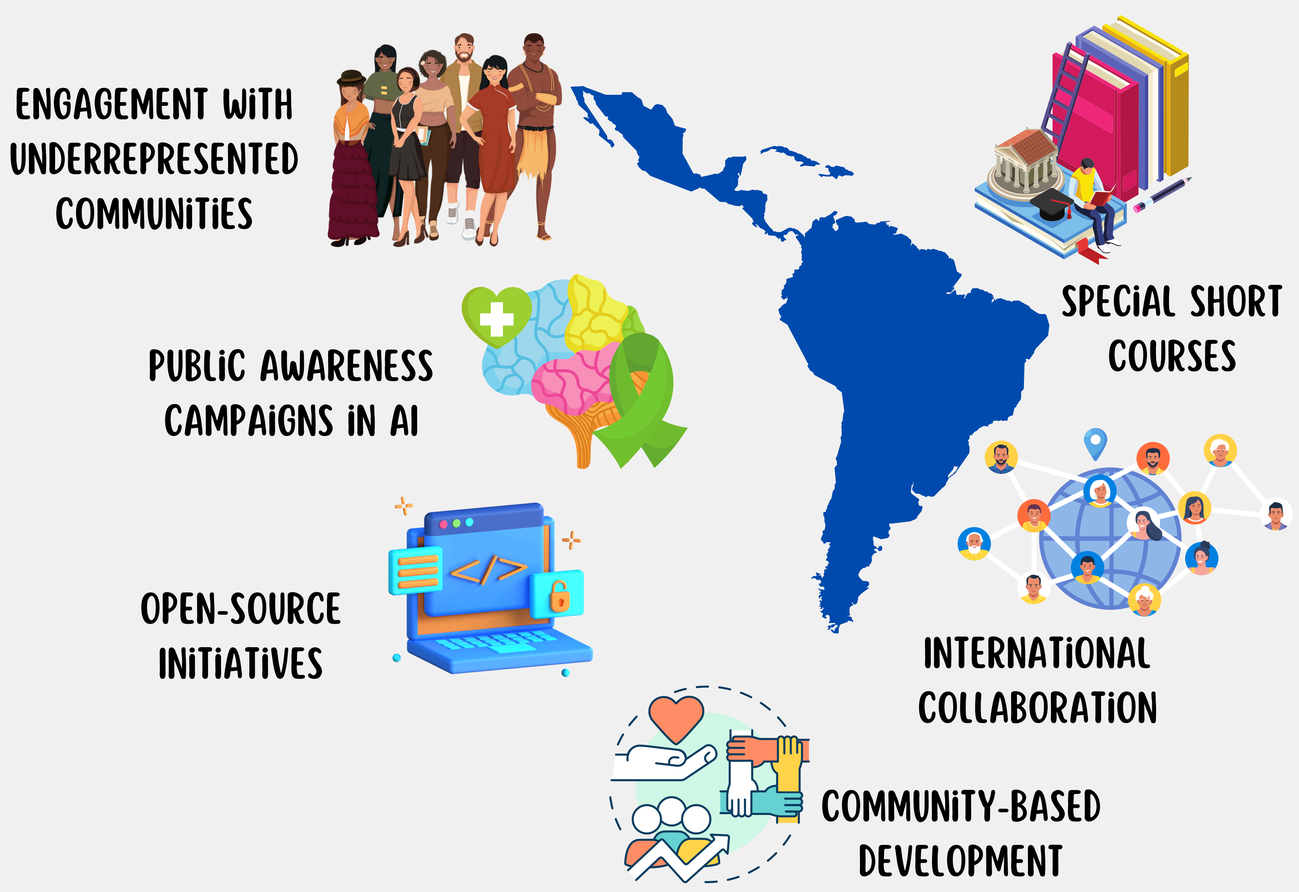
AutoAI-Pandemics
Democratizing Machine Learning

1 Background

- Lessons learned from the **COVID-19 pandemic outbreak point out the need to improve our preparedness** for similar events in the future.
- **Artificial intelligence (AI) provides valuable tools** to reduce pandemic impacts. AI, specifically Machine Learning (ML) algorithms, has enabled the **development of innovative solutions in healthcare, agriculture, forensics, and climate change.**
- Nevertheless, **designing robust and trustworthy ML solutions usually requires expertise not commonly found in health professionals**, causing severe inequalities
- The technical knowledge required to use AI and ML tools **prevents many professionals from adopting these technologies, creating a significant barrier to entry.**
- Given this challenge, **we propose to develop AutoAI-Pandemics,** an integrated and user-friendly platform designed for non-experts working with infectious diseases.
- This platform will provide accessible solutions that empower professionals to effectively leverage AI and ML technologies in their research and diagnostics, **breaking down technical barriers and enabling impactful applications in the field.**

2 Democratizing AI Knowledge in LAC



Our mission is to democratize AI through several targeted strategies:

- **Engagement with Underrepresented Communities:** Actively involving communities often excluded from technological advancements to ensure inclusive growth and impact.
- **Open-Source Initiatives:** Providing open access to tools and resources, fostering collaboration and innovation accessible to all.
- **Public Awareness Campaigns in AI:** Educating the public on AI's benefits and ethical implications.
- **Community-Based Development:** Developing AI solutions in partnership with local communities, tailored to address unique, local challenges.

3 AI for Everyone: Solutions Designed for Impact

BioAutoML — A no-code platform that allows biologists to build machine learning models for complex data without programming, streamlining research in life sciences.

MathFeature — An open-source Python package designed to extract numerical features from DNA, RNA, and protein sequences using mathematical descriptors

BioPrediction — An automated tool that simplifies biological data analysis, enabling researchers to predict interactions and outcomes efficiently.

ITT- Is That True? — An intuitive AI assistant that empowers non-experts to detect fake news, helping them find accurate information with ease.

AI-Assisted Oncology Navigation — An iterative set of tools to allow for scalable, high-quality patient care, allowing for mapping of treatment journeys, identification and intervention of bottlenecks and service optimization

InteliGente (Building paths of equality with artificial intelligence) — An educational initiative aimed at training a generation of young people in ethical and socially responsible AI, empowering them to solve challenges within their communities in the Global South.

4 Impact of Our Project

- **150,000+** — Total number of people directly and indirectly impacted by our projects.
- **60,000+** — Accesses, reaching a broad audience.
- **2,000+** — Individuals educated through our initiatives to democratize AI knowledge.
- **150+** — Academic citations earned by our research, highlighting its influence.
- **50+** — National and international news features covering our projects.
- **20+** — Awards recognizing the innovation and social impact of our work.

5 AutoAI

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