RESPONBLE AI IN HEALTH CARE

Healthcare is increasingly augmented by AI, especially in preventive and personalized medicine. In our current pilot, we model glycemic responses to local meals (e.g., *Dambu*) and simulate bacterial antibiotic resistance, showcasing AI's role in tackling chronic disease and public health risks. However, these technologies must be deployed responsibly to regain public trust and meet ethical standards.

Core Principles of Responsible AI

1. Data Integrity & Inclusivity: Our models are built on curated, real-world data sourced from diverse participants. This ensures inclusivity across age, gender, and dietary patterns, and guards against bias in glycemic or microbial predictions. We adopt rigorous preprocessing and validation to preserve accuracy and representativeness.

2. Transparency & Explainability: Using interpretable regression models and visual simulations, we ensure stakeholders—from clinicians to end-users—can understand how predictions are made. This is critical in diabetes risk modeling and resistance tracking where human oversight must guide decision-making.

3. Patient Privacy & Compliance: All data are handled with strict confidentiality, adhering to NDPR (Nigeria), HIPAA (US), and global best practices. Our systems avoid storing identifiable health data and comply with ethical protocols during testing, modeling, and deployment.

4. Human-Centered Design: We prioritize user experience by collaborating with the Design and Content teams to build accessible interfaces and community-friendly outputs. Our solutions are not replacements for healthcare professionals, but assistive tools that enhance early intervention and education.

5. Accountability & Reproducibility: All simulations and models are version-controlled via GitHub and designed for reproducibility. Outputs are peer-reviewed within the AI/ML track, and stakeholder feedback loops are integrated via our collaboration with Nurse Aisha Babagana and the clinical team.

Impact Outlook

Responsible AI ensures that our glycemic prediction tools and antibiotic resistance models are not just technically sound, but socially trustworthy. Through ethics-first engineering, we reinforce Otondo's commitment to inclusive, transparent, and preventive healthcare innovation.