Health Predictor

A submission to NTT Data AI Hackathon 2022

Atrij Talgery
(Team ATR21)

Context

- Health and wellbeing are central to the human experience
- Yet, nine million people die every year without proper healthcare services
- The healthcare journey needs to be improved for everyone by reducing cost and improving accessibility
- AI/ML can help with accessibility, early detection and management of diseases

Solution Concept

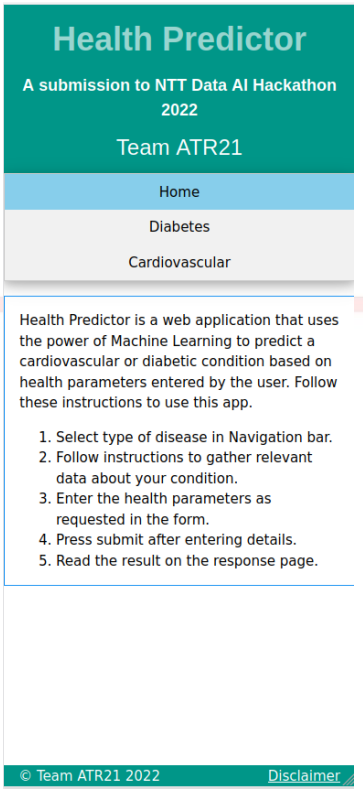
- Use historical diagnostic data to train AI/ML models
- Models learn continuously with latest data
- Models deployed and made accessible via ubiquitous webapp
- Webapp designed to assist user and help with early disease detection

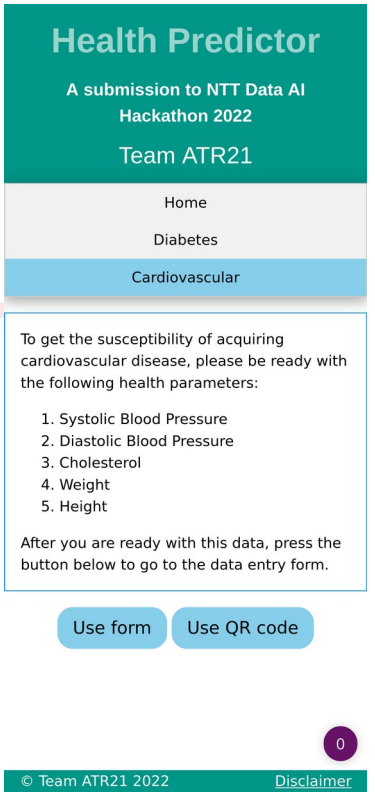
Data, ML models & training

- Publicly available datasets from Kaggle used
- ML ensemble model: Random Forest
- Jupyter Lab used to train, fine-tune and serialize ML models

Features

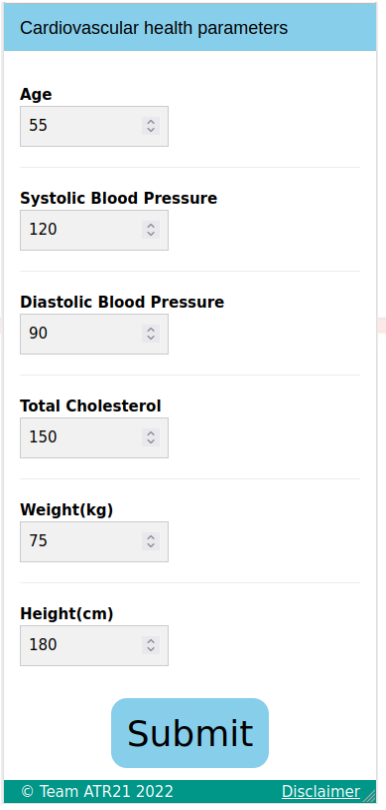
- Help for two most common health conditions: Cardiovascular and Diabetic disease
- Easy, responsive web interface with simple navigation heirarchy
- Easy to use with landing page help
- Easy to use entry forms with option to upload pregenerated QR code
- Reports probability of incidence to facilitate fuzzy interpretation

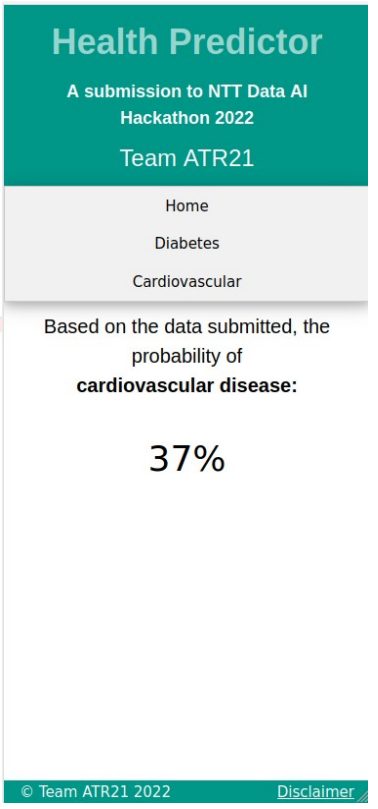




Benefits

- People can get prediagnostic overview prior to medical consultation
- Doctors & patients can save time by avoiding prediagnostic consultations
- Easy access anytime, anywhere and free of cost.
- Hospitals can deploy this app in kiosk mode in reception areas





Tech Stack Usage

- Front end: HTML/w3.CSS, JavaScript
- Programming and ML libraries: Jupyter Lab, Python pandas, numpy, matplotlib/seaborn, sklearn
- Backend and deployment: Python Flask for creating the webapp; deployment on LAN

Dev/Deployment Environment

- Anaconda version: 4.12.0
- Python 3.8.5
- Flask 2.0.1
- Developed on Ubuntu 20.04

Pitch for the final round

The concept is promising and can morph to its full potential with better quality data

- Can be used as knowledge-base for doctors with a continuously updated model(s)
- Better predictions
- Opportunity for low cost, ubiquitous access to a healthcare app(all you need is a web browser)

Thank You