

25 years of ITEA roadshow – The Netherlands

Project idea TongueWise

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Which problem do you want to solve?

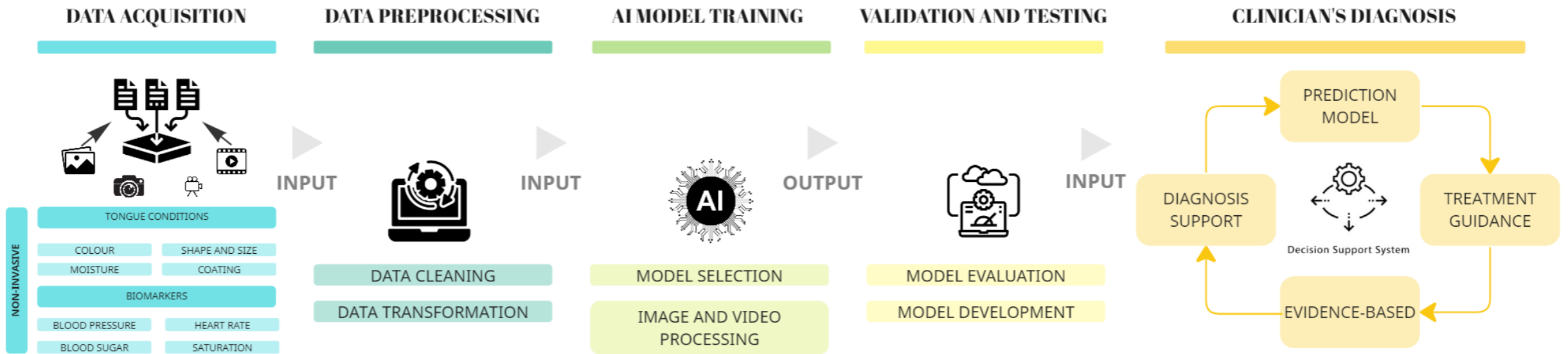
- The healthcare system is overloaded
- We would like to move to prevention
- For the early detection of several diseases SotA is that you should go to the Hospital or Laboratory for MRI scan or blood samples.

- How to collect these early predictors (biomarkers):
 - Some biomarkers (blood samples) are collected invasive
 - The measurement is time consuming
 - Data is old and far from real time
 - Dedicated (expensive) devices are needed

Non-invasive collection of biomarkers

From Lab to home: Use your mobile camera

Collect biomarkers; blood pressure, heart rate, heart rate variability (multiple parameters and RRI raw data), oxygen saturation, breathing rate, sympathetic stress, parasympathetic activity, pulse-respiration quotient (PRQ), hemoglobin, hemoglobin A1C, cholesterol total

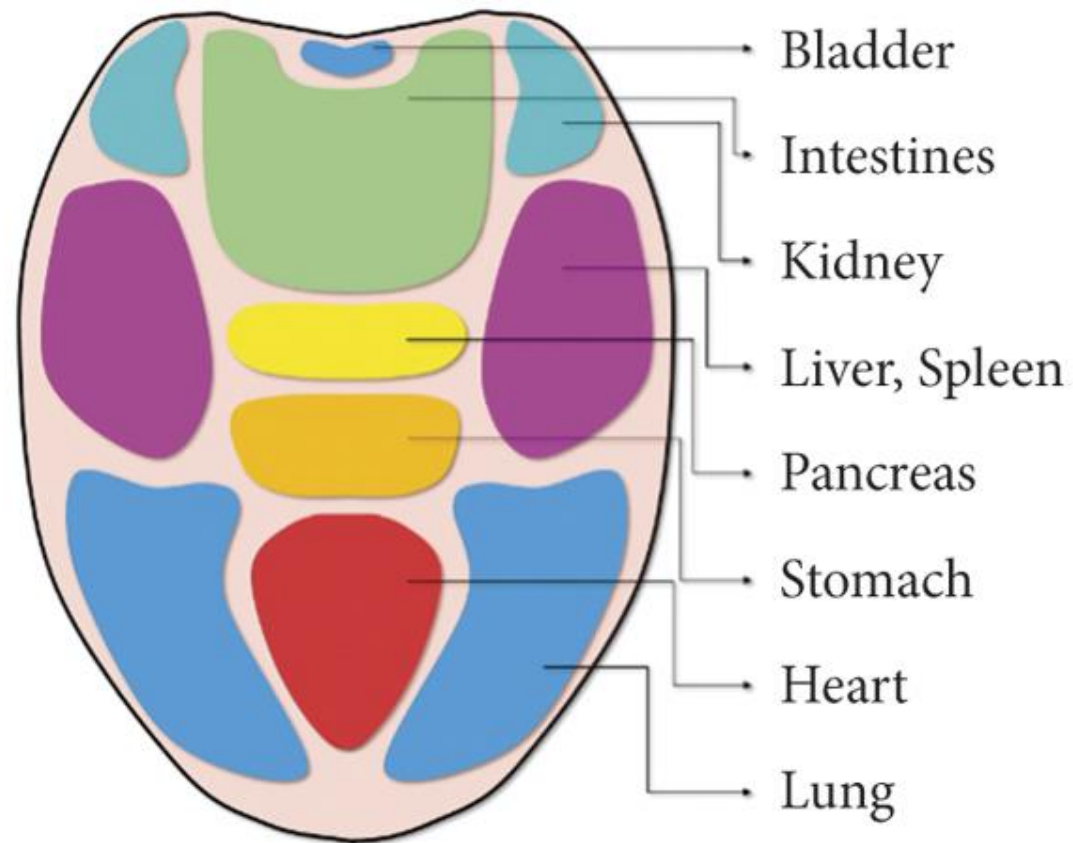


For instance; tongue diagnosis

Identification of tongue shape and texture features is a **difficult task** for tongue diagnosis in Traditional Chinese Medicine (TCM).

Within TONGUEWISE , we aim for non-invasive monitoring tool using mobile camera, with the main focus on the following innovations:	1	Deep learning tongue image analysis <ul style="list-style-type: none">➤ relatively consistent and stable tongue image dataset;➤ computer-aided analysis with the help of Artificial Intelligence (AI) and Machine Learning (ML) algorithms;➤ integrated into Electronic Health Records (EHRs)➤ facilitated through telemedicine, interoperable platform;
	2	Video-based vital signs monitoring <ul style="list-style-type: none">➤ enabling measurements of wide range of biomarkers;➤ remote and real-time processing;➤ Implemented with advanced computer vision techniques and Machine Learning algorithms;➤ early warning system for prompt intervention;

AI based early detection



What are you looking for?

- **Missing partners / expertise**
 - AI and ML experts in a healthcare domain
 - Image analysis (tongue image, facial expression etc.)
 - Computer vision technology and signal processing
 - Hospitals (primary end-users)
 - All countries eligible are welcome

- **Partners already involved**
 - MEDrecord
 - Dentists

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