Bye Bye human doctors, welcome Personal AI Doctor

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PROBLEM

Health of people is worsening because the Healthcare system fails in delivering its mission

Case for US Healthcare system

Out of 10 patients facing a medical issue, 7 decide to avoid the Healthcare system. This causes a worsening of the long-term health of the patients, that get exposed to serious consequence
Why patients do not visit doctors?

Increasing price
On average a primary care visit costs 160$ for uninsured patients and 50$ for insured patients across

Limited access to doctors
On average 5 days to get a visit, due to limited number of doctors (1 doc per 2k pat., in rural areas 4k pat.)

Increasing medical errors
On average 1 over 10 diagnoses is wrong, causing annually 80k deaths and 80k long term injuries

The reason underlying such issues is that the system is delivering healthcare through **traditional tools**, like human doctors, live visits, offline pharmacies, insurance companies. Relying on such tools is not effective anymore!

SOLUTION

Personal Doctor is a technology that brings a doctor in your pocket, leveraging on big data, mobile devices and AI with the objective to help people live healthier, longer and happier lives

Building block	Description	Output
Medical knowledge	**"Fictitious" records of 1M patients** Generated from probability distributions of gender, age and symptoms given a disease. Data source: PubMed and symptom checkers	
Personal Doctor	**Deep reinforcement learning** that asks question to the patient on most likely symptoms and predicts the disease, given as input the main symptom and the gender/ age	Questions on **324 symptoms** Prediction on **226 diseases**
Symptoms checker	**Recurrent neural network** that predicts most likely symptoms suffered by the patient given as input the main symptom and the gender/ age information	 *Symptoms map*
Disease predictor	**Deep neural network** that predicts most likely disease of the patient given as input the symptoms and the most important general info, i.e. gender and age	**70% accuracy** in predicting diseases

RESULT

Reduce cost of primary care
Increase access to medical opinion
Improve quality of healthcare

How the Personal Doctor works

Facing a medical issue
Kate is facing a strong nasal congestion, she cannot reach her doctor and is worried for her health

Consult Personal Doctor
Kate can get access to her Personal Doctor whenever and wherever thanks to her mobile device

Type general info and symptom
Kate types in her gender and age (if 1st time user) and describes her major symptom to Personal Doctor

Personal Visits
The Personal Doctor asks Kate questions on other symptoms (e.g. coryza, cough) and collects answers

Diagnosis & medical opinion
Personal Doctor provides Kate a diagnosis for the Acute Bronchitis and suggests the best treatment