Diagnose Me

Everyday, research is being done to further advance the field of medicine. Dedicated students, professors, and scientists around the world are striving to create and improve methods of surgical procedures, disease treatment, and medical diagnosis. Despite having direct access to state-of-the-art medical facilities and professionals, many patients still do not receive the treatment they need. Going to the doctor's office is a choice, one that is often made by the patient. This is a highly subjective choice, for it is flawed by inherent bias on the part of the patient. The average person will tend to lean away from visiting the doctor's office, so he or she will often convince themselves that they do not require medical attention even if they show signs of a serious illness, especially millennials[1]; research has shown a significant decline in doctor visits from 2001 to 2010[2][3]. Down the road, many of these patients will eventually end up at the doctor and spend far longer recovering than they would have had they simply gone to the doctor in the first place.

The solution our team developed is Diagnose Me, an Alexa skill (an add-on application to Amazon's virtual assistant, similar to Siri for Apple) designed to act as an in-home medical assistant. The idea is to reduce the number of undiagnosed medical cases by utilizing an affordable and accurate tool to help a user receive a preliminary diagnosis based on their symptoms. A patient reports their symptoms to Alexa and a probabilistic model based on existing medical data calculates potential diagnoses. Alexa then informs the user of two or three different illnesses along with their corresponding accuracies. Based on the diagnoses, our application recommends either an over-the-counter medication for low-risk cases or immediate medical attention for more high-risk illnesses. Although this is the main feature, users may inquire about different medication, such as the dosage, usage, and purpose of advil, tylenol, zantac, and more. In addition, there is the option to send a text message to key contacts in the case of a medical emergency where the user does not have access to a phone to call 911. In addition to this bountiful functionality, our idea may be expanded even further with touch-free prescription refills, household accounts for individual family members to keep track of past illnesses and symptoms, or to even remind users of their routine checkup dates. With the diverse aforementioned uses, Diagnose Me has the potential to revolutionize the

[1] http://www.ibtimes.com/healthcare-2015-why-millennials-avoid-seeing-doctors-what-means-rising-healthcare-2065473
[2] http://www.nytimes.com/2012/10/02/health/doctor-visits-drop-census-finds.html
[3] http://www.amednews.com/article/20111031/business/310319967/2/

smart, personal, touch-free healthcare industry through the interactiveness of Alexa-enabled gadgets.

Since this solution is targeted for release on virtual assistants, the audience must be participatory and seek to improve their overall well-being by leveraging the latest technological developments. Targeting anybody who is willing and able to begin making their home smart through Alexa-enabled devices (e.g. Amazon Echo), Diagnose Me will allow, and encourage them to become more cognizant about their health and body. The days of inconveniently searching for information on the internet are rapidly coming to an end. Our solution aims to bring a virtual medical assistant to households everywhere.

This application is accessible to users of all ages, as Alexa's expansive voice control allow for hands-free and intuitive interaction. Parents worried about the health of their children can easily obtain a quick, accurate preliminary diagnosis. Older people, who are often less technologically adept, can easily interact with Diagnose Me to obtain medical information they might otherwise be hard-pressed to find. Finally, this Alexa skill may apply to many other types of customers, such as young adults in college who do not have their parents to advise them on which medication to take, or the generic consumer that wakes up one day, completely ill, unable to move much or get out of bed, but can still use their voice to examine their symptoms.

Diagnose Me's purpose is essentially to be a reliable, credible virtual medical assistant. The average citizen does not possess enough medical knowledge to correctly diagnose him or herself. The value in our product is that it makes important medical information easily accessible and aids in the crucial decision of whether or not to go to the doctor, ensuring patients are properly treated before their symptoms worsen.

Implementing the idea for this project may be a challenge, but we are equipped with the skills to handle it. Our team currently consists of four members: Zac Yu, James Hahn (both Computer Science sophomores), Daniel Zheng (Computer Engineering freshman), and Srujan Dadi (Bioengineering freshman). This team has experience in many relevant areas, such as leadership, academic research, project management,, and application development. With our skills, we are capable of building a polished and useful application destined to positively impact the lives of everyone using it.

Diagnose Me has the potential to become a successful and impactful startup. Its convenience and real-world applications would make it a particularly desirable technology in today's society. If we were to become a startup, our team would be more than happy to continue to develop our product through and beyond the startup stage. We firmly believe that this is a product that holds immense potential and can improve the health and lifestyle of thousands, if not millions, of people. Through Diagnose Me, we would have the ability to truly educate the people of the world about their health; we would be the catalyst that forms the path to a brighter, healthier future.