PLAGIARISM SCAN REPORT

Words	688	Date	January 28,2020
Characters	4209	Exclude Url	

0% Plagiarism	100% Unique	0 Plagiarized Sentences	38 Unique Sentences

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Ambient Voice Technology in Healthcare The crux of healthcare industry is doctor-patient relationship and patient care. But digital records regulation has put them under pressure. Doctors are capable of seeing 40 or more patients in a day if they don't have to spend time on making the digital records entry during or after patient interaction. Imagine yourself standing in a queue for the check up with doctor at the hospital. Since, the doctor can only handle one patient at a time, there's a long queue of patients. You're feeling little anxious, also by watching all other people around you. Finally, you enter the room and doctor asks you questions which you are trying to answer. He listens and writes things on the sheet of paper. There could be something else which you would like to inform to the doctor but it's bit harder to talk while he's writing a prescription and clearly then time is up. During check-up doctor spent lot of your time in writing down notes, prescription and advice. Also, after patient's exit also doctor need to complete the entry of patient details on the system. Most of doctor's time of an office day is spent on EHR and desk work. We can automate this EHR and desk work by using ambient voice technology. Electronic environment which are sensitive and responsive to the presence of people is known as Ambient Intelligence. The ambient intelligence paradigm builds upon context awareness, pervasive computing and human-centric computer interaction design. Per for which we need systems and technologies that are embedded, context aware, personalized and adaptive. In Ambient voice technology, devices work to support people in carrying out their day to day activities and tasks in a natural way using information and various algorithms. As the devices listens to human conversation and can transcribe the communication and save all this information. We can have a virtual assistant on PC/smartphone, in the room, which is listening to the communication between patient and doctor. The assistant listens to the doctor patient interaction, transcribe and sort the notes of this conversation and generate prescription with digital signature of the doctor. This way the interaction of patient and doctor is completed without a single click on the system which actually reduces the doctor's time with the system during interaction with patient. This helps us in cutting down on the time a doctor spends at the computer. Doctor can focus more on patient and this also in turn increase the number of patients examined by a doctor in a day. Now patient know what all is being noted down in the system. All this information is stored in the EHR format. This helps in saving doctors time of making health records in EHR format. To build this type of a virtual assistant, we need a combination of advanced speech recognition, natural language processing and machine learning. We need to have a medical vocabulary that accurately captures doctor's natural verbal interaction with patient and parses it for EHR. Also, we can use word cloud technology to give importance to the words having medical meaning. To meet accuracy, we can have human feedback which will help virtual assistant train itself faster. Virtual assistant will actively listen to doctor-patient encounters and auto generates the notes and record them in EHR format. It also generates prescription having digital signature of the doctor and after review by doctor, this can me mailed or send as a SMS to the patient. This virtual assistant can be used for other healthcare specialities like internal medicine, paediatrics, orthopaedics, urology etc due to its ambient mode. Ambient mode reduces the friction as no more need to invoke the virtual assistant with specific commands again and again. Doctors can also use this virtual assistant during surgery as all the communication in the surgery room can be recorded. This will have impact on doctor's quality of life and work life balance. As doctors are often forced to either type in an EHR during patient examination or spend hours at night in entering this information. This eliminates one of the most important problem of doctors and patients.

Sources	Similarity