

VOICE RECOGNITION SYSTEM FOR STREAMLINING DATA ENTRY IN MASS CASUALTY TRIAGE

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The importance of the triage process is self-evident in mass casualty incidents. Triage is the prioritization of patient care during any natural or man-made incident, based on injury, illness, severity, prognosis and available resources. Previously in our research we created tools for the triaging process, a mobile tool for registration and categorization purposes, it also has the E-FAST and Transportation functions [1]. In order to optimize the recording data in the first phase of the triaging process we decided to implement voice and speech recognition techniques.

This paper presents an innovative approach in the realm of emergency medical services by employing voice recognition technology within mobile applications to enhance mass casualty triage efficiency. In the face of large-scale disasters, the limitations of manual data entry in terms of time and error susceptibility pose significant challenges to effective patient care. We propose a novel solution featuring hands-free, verbal data entry by paramedics directly into a digital triage system, overcoming the hurdles associated with traditional methods. This system integrates advanced AI algorithms, enabling the interpretation based on structured verbal assessments following a defined protocol.

Voice recognition technology converts a spoken word into command or in text such as in our case. This technique has a significant impact in the healthcare field. Medical personnel normally spend a lot of time doing paperwork. It takes time to type or even to write out notes, but it is quickly to speak them aloud. In this regard, spending less time on triaging is equal to more opportunity in saving people. Thus, we developed a mobile application. The purpose of this application is to collect audio data set according to some predefined requirements. Afterwards we intend to use speech recognition techniques in order to analyze and extract the needed information and to put it into a table data base.

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To ensure accuracy and facilitate data mapping into the necessary database fields, the voice recognition system requires the use of 'keys' as prefixes before the actual values. For instance, a paramedic might say "Gender key, female," or "Heart rate key, 110." The introduction of these keys aids the system in identifying, segmenting, and correctly allocating the recognized text. This protocol-based approach significantly accelerates the data entry process, minimizes human error, and optimizes care delivery during high-pressure emergency scenarios.

References:

1. O. Caftanatot, T. Bumbu. Tools for Triaging in Mass Casualty Incidents. In: *Proceedings of Workshop on Intelligent Information Systems WIIS2022, October 06-08, Chişinău, Republic of Moldova*, (2022), 79–88.