ISE2

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Title: Implementing Virtual Personal Assistant Through Artificial Intelligence Requirements (IEEE Xplore, 23rd March 2023)

Introduction: In field like Airlines each time the client desires support, they interact the support desk. The support desk could have huge form of partitions to cope with the one-of-a-kind types of problematic information that needs a big human power. To overcome the ones situations, planned a scheme that stretches an automatic response to the clients for the entreated enquiries and inside the planned resolution it prepares now some people interference. The projected resolution transmits on procedures in particular BERT and NLP.

Summary: NLP is used for speech reputation in client that receives the enquiries from the client and changes them into manuscript transcription. The BERT set of policies for preparation of datum and stop end outcome forecast to client enquiries. By the use of pre-labelled instances as training data, tool getting to know algorithms can look at the one-of-a-kind establishments amongst quantities of manuscript, and the selected result is predictable for a selected participation

Analysis:

- **Strengths of the Research Paper:**
    1. Well abstracted implementation: A major part of this project is abstracted with the use of BERT as a pre-trained transformer
    2. Highly flexible implementations: As mentioned in the paper, BERT can be trained upon pre-labelled instances to fine-tune for specific one-of-a-type applications.

- **Weaknesses of the Research Paper:**

    1. Lack of a literature survey section: Research paper does not have a dedicated portion to literature survey which takes away chances of taking inspiration from other similar project ideas.
    2. Absence of future scope discussion: Lack of dedicated section for

Methodology Evaluation:

Amount of unique implementations: The factor of freedom that the basic template-like architecture this project gives exponentially enhances the number of ways the content of this paper can be used

Significance of Findings:

1. Time-saving ability in multiple fields: A well-trained implementation of this architecture can save time, man power and guarantee customer satisfaction to a great degree.

Title: Voice based virtual assistant with security learning (IEEE Xplore, 05 April 2023)

Introduction: With the advancements in speech recognition and AI technology, there is a growing demand for convenient and efficient ways to interact with technology. A Voice-based Virtual Assistant is a technologically advanced solution that uses speech recognition and artificial intelligence to provide users with a convenient and efficient way to interact with devices, access information, and perform tasks. It makes use of the GPT-3 language processing model by OpenAI to respond intelligently.

Summary: Virtual assistants have become increasingly popular in recent years, as users are seeking more convenient and efficient ways to interact with technology. Many other uses for virtual assistants are possible, such as entertainment, information retrieval, home automation, and personal productivity. The purpose of virtual assistant is to provide a solution that is both accessible and simple to use for people with disabilities while also addressing the growing demand for convenient and secure methods to connect with technology. Many technological solutions currently available are inaccessible to people with disabilities, such as the blind. By adding speech recognition technology and making it simpler for people with impairments to engage with their devices and access information, the virtual assistant tries to alleviate this problem. Privacy issues have become more common as more personal data is stored on devices and in the cloud.

Analysis:

- **Strengths of the Research Paper:**
    1. Well researched literature survey: Comparison of existing language models and modules related to the same are compared in a tabular format.
    2. Clear methodology: Clearly mentions how voice biometric security and other modules should be integrated along with the proposed voice assistant

- **Weaknesses of the Research Paper:**

    1. Third party API dependency: Multiple third party APIs are used such as OpenAI ChatGPT API, gTTS google API, NeMo speaker recognition API.
    2. Requirements of reliable text-to-speech technology: All input correctness can be lost if correct text-to-speech methods are not used at the user end. Creation of custom text-to-speech models based upon accent and local lingo can be used but would require addition data collection.