Proceedings of the International Conference on Sustainable Computing and Smart Systems (ICSCSS
DVD Part Number: CFP23DJ3-DVD; ISBN: 979-8-3503-3359-6

31_Automatic Question Answer Generation using T5 and NLP

Automatic Question Answer Generation using T5 and NLP

Altaj Virani
Computer Engineering
Vidyavardhini's College of Engg and Technology, University of Mumbai, Vasai, India
altaj.s204513112@vcet.edu.in

Rakesh Yadav
Computer Engineering
Vidyavardhini's College of Engg and Technology, University of Mumbai, Vasai, India
rakesh.s204523101@vcet.edu.in

Prachi Sonawane
Computer Engineering
Vidyavardhini's College of Engg and Technology, University of Mumbai, Vasai, India
prachi.s204503202@vcet.edu.in

Smita Jawale
Associate Prof. Computer Engineering
Vidyavardhini's College of Engg and Technology, University of Mumbai, Vasai, India
Smita.jawale@vcet.edu.in

***Abstract*—Automatic Question Answer Generation (QAG) systems have received significant attention in recent years due to their potential to improve the efficiency of various natural language processing tasks. A QAG system is proposed that utilizes a state-of-the-art language model to generate high-quality question-answer pairs. The system supports various types of questions, including Wh-questions, fill-in-the-blank, full- sentence questions, multiple-choice questions, and true-false questions. System is developed and tested on a diverse range of text-based datasets, and the results show that it can generate accurate and relevant questions and answers for a given piece of text. The QAG system has significant potential for use in educational, industrial, and research settings where quick and efficient comprehension of text is crucial. The system's usability and effectiveness are demonstrated through experiments, and we believe that it has the potential to be a valuable tool for a wide range of natural language processing tasks.**

Keywords*— *NLP (Natural Language Processing), QAG (mcq, fill ups, true or false, answer in one sentence) POS(part of speech), NER(Named Entity Recognizer)

I. INTRODUCTION

In today's world, there is an increasing demand for automatic question answer generation systems due to their potential to revolutionize the way we learn and share information. With the exponential growth of digital content, such as textbooks, scientific papers, and educational videos, there is a need for efficient and effective ways to generate questions and answers from this vast amount of information. Additionally, the COVID-19 pandemic has accelerated the adoption of e-learning and remote education, further increasing the demand for automated question answer generation systems. The current trends in automatic question answer generation focus on leveraging the advancements in natural language processing (NLP) and machine learning (ML) techniques to develop more accurate and efficient systems. These systems utilize large datasets and pre-trained language models to generate high-quality questions and answers from various sources of information. Furthermore, the trend towards personalized education and adaptive learning has led to the development of systems that can generate customized questions based on the learner's knowledge level, learning style, and interests.

The present status of automatic question answer generation systems is promising. The recent advancements in NLP and ML techniques have led to the development of highly accurate and efficient systems that can generate questions andanswers from various sources of information. These systemshave the potential to reduce the workload of educators by automating the process of generating questions and answers for assessments and evaluations. Additionally, they can improve the learning outcomes of students by providing personalized and interactive learning experiences. The AQAG system is a sub-field of natural language processing (NLP) and information retrieval (IR). The system utilizes various techniques such as machine learning, statistical analysis, and knowledge representation to extract information and generate questions and answers. The system can be used to generate questions and answers for various domains, including education, customer service, and entertainment. The system is an advanced automatic question answer generation system that covers various types of questions such as simple factoid, gap fill, MCQ based, true/false, and full sentence. It is designed to assist educators in creating assessments and evaluating student understanding of the material. The system uses natural language processing and machine learning algorithms to generate questions from various knowledge sources. One of the key features that set the system apart from other systems is its ability to generate questions of different types. Many existing systems are limited to generating only one or two types of questions, such as simple factoids or MCQs. The system, on the other hand, is versatile and can generate a wide range of questions, including fill-in-the-blank, true/false, and more complex sentence-based questions.

II. PROBLEM STATEMENT

The paper proposes an Automatic Question Answer Generation (QAG) system that aims to generate high-quality questions and answers from large digital content, catering to the growing demand for e-learning and remote education. Existing QAG systems are limited to generating specific types of questions, hence the need for a system that can generate wide range of question types accurately and efficiently. The proposed system utilizes state-of-the-art language models and machine learning techniques to generate accurate and relevant question-answer pairs for various types of questions. Its potential for use in educational, industrial, and research

HEAD
Dept of Computer Engg.,
Vidyavardhini's College of Engineering and Technology,
Vasai Road 401 202

VIDYAVARDHINI'S COLLEGE OF ENGINEERING & TECHNOLOGY
COMP Engg.

IEEE ICSCSS

Hindusthan College of Engineering and Technology
(An Autonomous Institution Affiliated to Anna University | Approved by AICTE, New Delhi)
Accredited with 'A' Grade by NAAC | Accredited by NBA (ECE, MECH, EEE, IT & CSE)
Valley Campus, Pollachi Highway, Coimbatore 641 032. | www.hicet.ac.in

CERTIFICATE OF PRESENTATION

This is to certify that

Smita Jawale

have successfully presented the paper entitled

Automatic Question Answer Generation using T5 and NLP

at the
International Conference on
Sustainable Computing and Smart Systems (ICSCSS 2023) organized by
Hindusthan College of Engineering and Technology, Coimbatore, India
on 14-16, June 2023

Session Chair

Dr. B. Anand
Conference Chair

Dr. J. Jaya
Principal

HEAD
Dept of Computer Engg.,
Vidyavardhini's College of
Engineering and Technology,
Vasai Road 401 202

VIDYAVARDHINI'S COLLEGE OF ENGINEERING & TECHNOLOGY
COMP Engg.