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A NEW APPRAOCH FOR USING AI TECHNOLOGIES TO AUTOMATE AND FACILITATE E-GOVERNMENT SERVICES

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Abstract: Propose a framework that utilizes AI technologies to automate and facilitate e-government services. Specifically, we first outline a framework for the management of e-government information resources. Second, we develop a set of deep learning models that aim to automate several e-government services. Third, we propose a smart e-government platform architecture that supports the development and implementation of AI applications of e-government. Ouroverarching goal is to utilize trustworthy AI techniques in advancing the current state of e-governmentservices in order to minimize processing times, reduce costs, and improve citizens' satisfaction.

INTRODUCTION

Machine Learning (ML) is the ability of an algorithm to learn from prior data in order to produce a smart behavior and make correct decisions in various situations that it hasever faced before. ML algorithms are enabled by training a computational model, which is the process of exposing an algorithm to a large dataset (e.g., citizens' demographics) in order to predict future behaviors (e.g., employment rates). The process of learning from prior datasets is known as a supervised learning.Unlike traditional ML algorithms, Deep Learning, a subfield of ML, has emerged to outcome the limitations of prior ML algorithms. Deep learning can be defined as a mapping function that maps raw input data (e.g., a medical image) to the desired output (e.g., diagnosis) by minimizing a loss function using some optimization approach, such as stochastic gradient descent (SGD). Deep learning algorithms,inspired by the neural networks in the human brain, are built with a large number of hierarchical artificial neural networks that map the raw input data (inserted at the input layer) to the desired output (produced at the output layer) through a large number of layers (known as hidden layers), and thus the name deep learning. The hidden layers are responsible for the actual mapping process, which is a series of simple but nonlinear mathematical operations (i.e., a dot product followed by a nonlinear process). The main advantage of deep learning is that it does not require feature engineering.

LITERATURE SURVEY

1. Translating Videos to Natural Language Using Deep Recurrent Neural Networks.

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Solving the visual symbol grounding problem has long been a goal of artificial intelligence. The field appears to be advancing closer to this goal with recent breakthroughs in deep learning for natural language grounding in static images. In this paper, we propose to translate videos directly to sentences using a unified deep neural network with both convolutional and recurrent structure. Described video datasets are scarce, and most existing methods have been applied to toy domains with a small vocabulary of possible words. By transferring knowledge from 1.2M+ images with category labels and 100,000+ images with captions, our method is able to create sentence descriptions of open-domain videos with large vocabularies. We compare our approach with recent work using language generation metrics, subject, verb, and object prediction accuracy, and a human evaluation.

2. Quantum Deep Learning Triuniverse

Angus McCoss

An original quantum foundations concept of a deep learning computational Universe is introduced. The fundamental information of the Universe (or Triuniverse) is postulated to evolve about itself in a Red, Green and Blue (RGB) tricoloured stable self-mutuality in three information processing loops. The colour is a non-optical information label. The information processing loops form a feedback-reinforced deep learning macrocycle with trefoil knot topology. Fundamental information processing is driven by ψ-Epistemic Drive, the Natural appetite for information selected for advantageous knowledge. From its substrate of Mathematics, the knotted information processing loops determine emergent Physics and thence the evolution of super-emergent Life (biological and artificial intelligence). RGB-tricoloured information is processed in sequence in an Elemental feedback loop (R), then an Operational feedback loop (G), then a Structural feedback loop (B) and back to an Elemental feedback loop (R), and so on around the trefoil in deep learning macrocycles. It is postulated that hierarchical information correspondence from Mathematics through Physics to Life is mapped and conserved within each colour. The substrate of Mathematics has RGB-tricoloured feedback loops which are respectively Algebra (R), Algorithms (G) and Geometry (B). In Mathematics, the trefoil macrocycle is Algebraic Algorithmic Geometry and its correlation system is a Tensor Neural Knot Network enabling Qutrit Entanglement. Emergent Physics has corresponding RGB-tricoloured feedback loops of Quantum Mechanics (R), Quantum Deep Learning (G) and Quantum Geometrodynamics (B). In Physics, the trefoil macrocycle is Quantum Intelligent Geometrodynamics and its correlation system is Quantum Darwinism. Super-emergent Life has corresponding RGB-tricoloured loops of Variation (R), Selection (G) and Heredity (B). In the evolution of Life, the trefoil macrocycle is Variational Selective Heredity and its correlation ecosystem is Darwin's ecologically "Entangled Bank".

PROBLEM STATEMENT

Recently, many countries have adopted e-government services in various departments and many autonomous applications. While there are several studies conducted for enhancing e-government services, only a few of them address utilizing recent advances in AI and SVM (Support Vector Machine) in the automation of e-government services. Therefore, there is still an urgent need to utilize state-of-the-art AI techniques and algorithms to address e-government challenges and needs.

- In contrast, implementing e-government applications still faces several challenges, including the following:
- Trust: trusting online services depends heavily on a couple of factors including, the citizens trust in the government itself, the quality of the online services, and the personal believes (e.g., there still a large number of citizens who prefer to handle paper applications rather than web services).
- Lack of experts: implementing high-quality online services requires the establishment of the right team of experts that covers all involved practice areas from web development to security and privacy.
- Inaccessibility: several third world countries still face significant issues on accessing the internet and its services.
- Security: state-of-the-art security measures are required to secure e-government applications and the citizen's privacy.

PROPOSED SYSTEM

In this paper author describing concept to automate government services with Artificial Intelligence technology such as Deep Learning algorithm called Convolution Neural Networks (CNN). Government can introduce new schemes on internet and peoples can read news and notifications of such schemes and then peoples can write opinion about such schemes and these opinions can help government in taking

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better decisions. To detect public opinions about schemes automatically we need to have software like human brains which can easily understand the opinion which peoples are writing is in favor of positive or negative.

To build such automated opinion detection author is suggesting to build CNN model which can work like human brains. This CNN model can be generated for any services and we can make it to work like automated decision making without any human interactions. To suggest this technique author already describing concept to implement multiple models in which one model can detect or recognize human hand written digits and second model can detect sentiment from text sentences which can be given by human about government schemes. In our extension model we added another model which can detect sentiment from person face image. Person face expressions can describe sentiments better than words or sentences. So, our extension work can predict sentiments from person face images.

SAMPLE RESULTS

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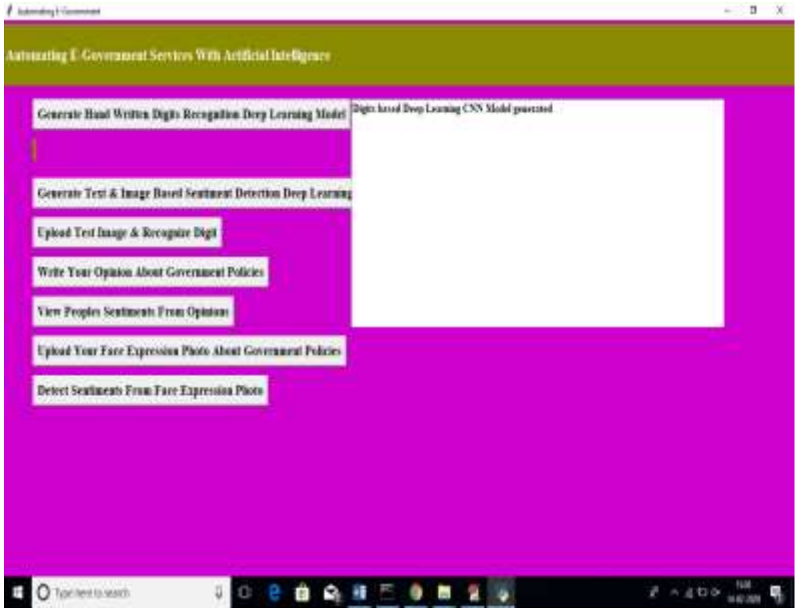

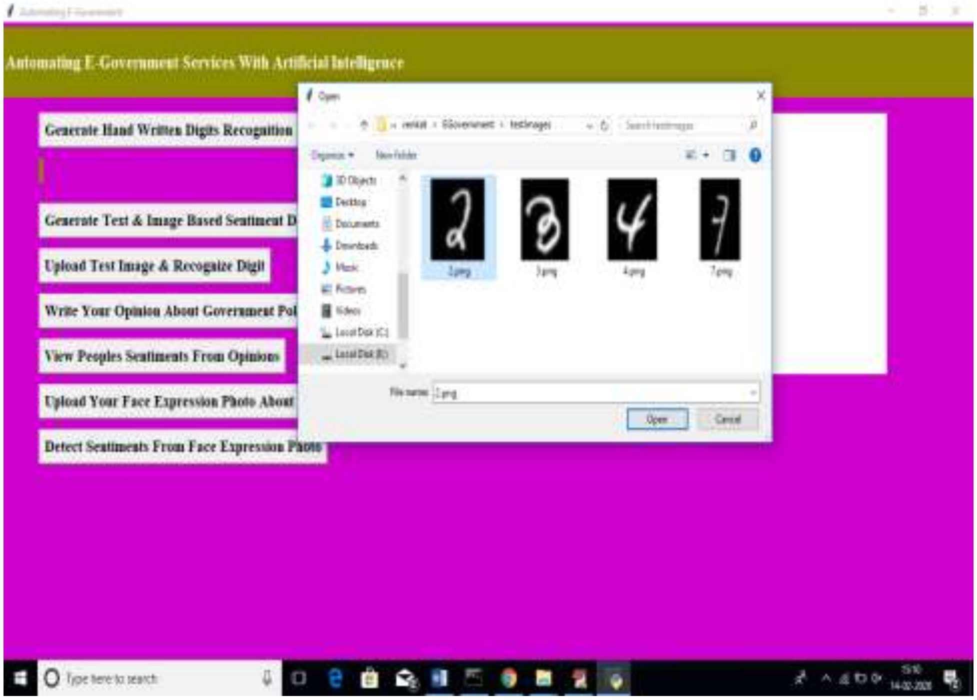

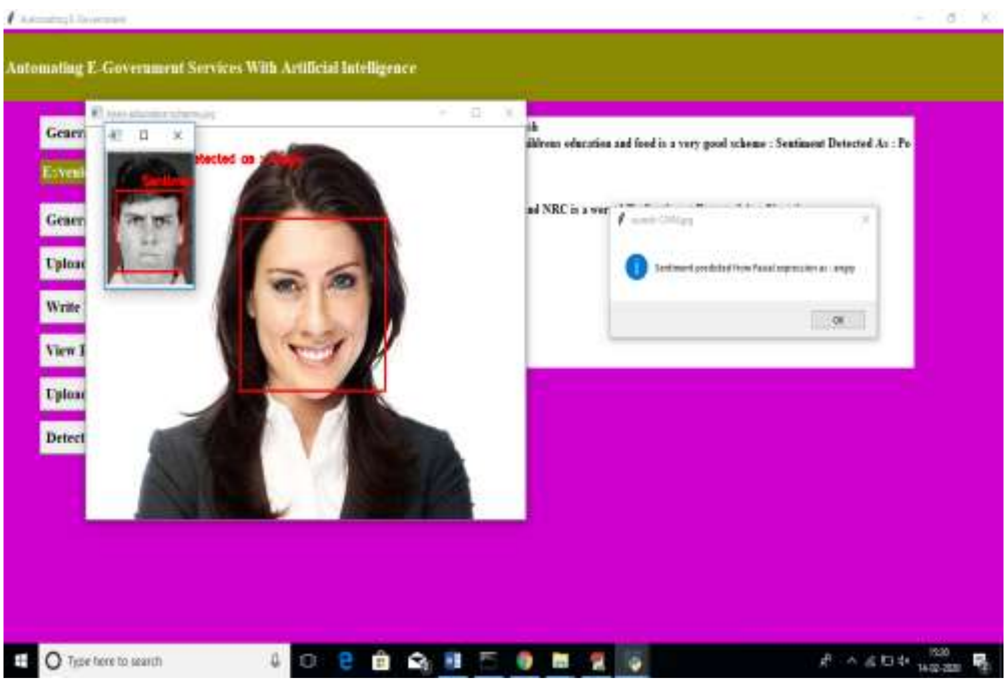

CONCLUSION

In this paper, we introduced the definitions of artificial intelligence and e-government, briey discussed the current state of e-government indices around the world, and then proposed our solutions to advance the current state of e-government, considering the Gulf Countries as a case study. We proposed a framework for management of government information resources that help manage the e-government lifecycle end-to-end. Then, we proposed a set of deep learning techniques that can help facilitate and automate several e-government services. After that, we proposed a smart platform for AI development and implementation in e-government.

The overarching goal of this paper is to introduce new frameworks and platform to integrate recent advances in AI techniques in the e-government systems and services to improve the overall trust, transparency, and efficiency of e-government.

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