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Conversational AI as a Mentor

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ABSTRACT

It is an agreed fact that mentorship plays a major role in taking up a career in which people can get a clear picture of what they need and how they are supposed to get it. But why do most people still disagree with the above fact and are not fully satisfied with their career choices? These variations lead to an indistinctive choice of paths in people's lives. Using the proposed software model one can eliminate the confusion in decision-making while choosing a definite career path, be it in a technical or non-technical field. Our model is inclusive and effective in the long run.

***Index Terms*— Chatbot, artificial intelligence, data science, machine learning, behavior, data privacy**

1.INTRODUCTION

The rapidly growing body of chatbot research has a marked interdisciplinary stream—spanning fields such as informatics, management and marketing, media and communication science, linguistics and philosophy, psychology and sociology, engineering, design, and human-computer interaction. This broad emerging knowledge base is valuable but also implies that research of relevance to chatbots is currently fragmented across disciplines and application domains. With a broad and rich range of chatbot applications, it is imperative for understanding why certain chatbot usages are working (or not) by referencing in-depth theoretical frameworks. As the current wave of chatbot research is progressing, there is a need to define

Overarching research directions for guidance, allowing new studies and initiatives to build on and benefit from existing work systematically. The recent substantial increase in chatbot research can be seen as a direct response to the uptake of so-called virtual assistants by big tech companies, specifically Siri as part of the Apple operating system in 2011, Amazon's promotion of Alexa in 2014, and the conversational turn of Face book, Microsoft, and Google in 2016. Chatbots are conversational agents providing access to information and services through interaction in everyday language. While research on conversational agents has been pursued for decades within fields such as social robotics, embodied conversational agents, and dialogue systems, it is only recently that conversational agents have become practical reality. Chatbots are increasingly becoming important gateways to digital services and information—taken up within domains such as customer service, health, education, and work support. However, there is only limited knowledge concerning the impact of chatbots at the individual, group, and societal level. Furthermore, a number of

challenges remain to be resolved before the potential of chatbots can be fully realized. In response, chatbots have emerged as a substantial research area in recent years The existing systems focus on different aspects of human presence and are partially bot involved. The present system provides search results rather than providing guidance. The Siri or Alexa are furthermore advanced but restrict themselves from being fully functional mentors.

The proposed system tries to expand itself as a fully functional mentor. This is done by feature extraction using the historical and existing data available over the internet and other sources. The idea focuses on bringing out accurate suggestions as much as possible to enhance end users' decision-making over choosing their right career paths. Dialogue management may be enabled through simple speech-tag approaches, statistical data-driven systems, or neural generative end-to-end approaches However, in consequence of the rapid evolvement both in technology, services, and patterns of use, we find such attempts at principled scoping of the chatbot term challenging. For example, there is often no clear distinction between social chatter and goal orientation in conversational agents as seen by the importance of social responses for customer service chatbots. Chatbots are increasingly becoming important gateways to digital services and information—taken up within domains such as customer service, health, education, and work support. However, there is only limited knowledge concerning the impact of chatbots at the individual, group, and societal levels.

2. CONVOLUTIONAL NEURAL NETWORK

A Convolutional Neural Network (ConvNet/CNN) is a Deep Learning algorithm which can take in an input image, assign importance (learnable weights and biases) to various aspects/objects in the image and be able to differentiate one from the other. The pre-processing required in a ConvNet is much lower as compared to other classification algorithms. While in primitive methods filters are hand-engineered, with enough training, ConvNets have the ability to learn these filters/characteristics. The architecture of a ConvNet is analogous to that of the connectivity pattern of Neurons in the Human Brain and was inspired by the organization of the Visual Cortex. Individual neurons respond to stimuli only in a restricted region of the visual field known as the Receptive Field. A collection of such fields overlap to cover the entire visual area.

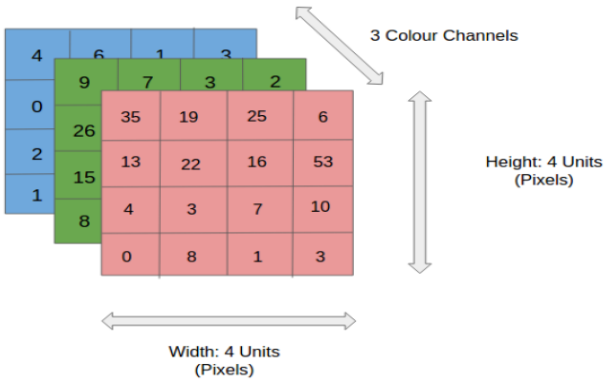

Figure 1 : 4x4x3 RGB Image

In figure 1, we have an RGB image which has been separated by its three color planes — Red, Green, and Blue. There are a number of such color spaces in which images exist — Grayscale, RGB, HSV, CMYK, etc. You can imagine how computationally intensive things would get once the images reach dimensions, say 8K (7680×4320). The role of the ConvNet is to

reduce the images into a form which is easier to process, without losing features which are critical for getting a good prediction. This is important when we are to design an architecture which is not only good at learning features but also is scalable to massive datasets.

4.XGBOOST ALGORITHM

XGBoost is an implementation of Gradient Boosted decision trees. XGBoost models majorly dominate in many Kaggle Competitions. In this algorithm, decision trees are created in sequential form. Weights play an important role in XGBoost. Weights are assigned to all the independent variables which are then fed into the decision tree which predicts results. The weight of variables predicted wrong by the tree is increased and these variables are then fed to the second decision tree. These individual classifiers/predictors then ensemble to give a strong and more precise model. It can work on regression, classification, ranking, and user-defined prediction problems.

3. CONCLUSION

The so far developed systems are limited to providing tests and training to individuals on the basis of their changing interests. They try to acquire the exact skills and make them aware of the career path they can choose. Most of the time it does not work that way. This need-gap has been utilized by most of the models which provide path-based training, without even letting the individual know the alternative if it does not work out. Those training are either paid or free with limited resources. A lot of people change their career in the near future as they are not satisfied or not sure about the career they chosen, again they are indefinite about the new career path and also wasting a bunch of dollars over unsure pathways. There are consultancies who try to bridge this gap, instead their approach is rather conventional and limited to their satisfaction. Career guidance and mentorship are commercialized and have been fully bugged with human error. Pathberries is here revolutionalize this conventional strategy and modernize the learning paths optimally benefitting all parties with unique revenue models.

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