Introducing Mantasha! Your new coding buddy and assistant

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**Abstract**

This paper presents an improved chatbot system in the world of app development and programming, by using Artificial Intelligence techniques. The model proposed in this work analyses a developer’s app code or program source code then it would apply some Big Data and Machine Learning techniques to generate a better code of that program. The source code or text is first passed through a text document tagger then a RPC is generated according to the program’s source code and Mantasha (The AI Program) compares the code in a big database with several other templates. After that Mantasha triggers her Neural schema, to generate an improved clone of the program by using its Training data, and notifies solutions of any logical and coding error, in developer’s source code.

1.1 Artificial Intelligence

By all means, Artificial Intelligence can be defined as the theory and development of such computer programs, which are able to perform human tasks, and requiring human capabilities like, Visual Perception, Speech Recognition, Natural Language Processing, Data Mining, simply we can say that Artificial Intelligence tries to mimic human intelligence. Artificial Intelligence is a vast and still improving, it has many sub-branches. We can surely say that Artificial Intelligence is the future.

1.2 Neural Schema

Now a day’s Researchers and scientists are trying to develop such programs which are intelligent and can think on their own, simply we can say developers are trying to develop such programs which can mimic human’s thinking intelligence, but doing all these requires a model which can generate responses and logics from scratch, but we are far away from this because we don’t know how our own thinking and Intelligence works. There is only one better solution to solve this problem, Using artificial neuron system, as human brain uses, In neural schema or Artificial Neuron System a single neuron is connected to many others and when any question or input is triggered it passes through different neurons and on the basis of neuron weight, which is gained by previous training data and other responses the system calculates the output and notifies the user.

**Keywords**

Mantasha, Artificial Intelligence, Synthetic Intelligence, Big Data, Machine Learning, Neural Schema, Chatbot, Programming, app Development, SQL, C#
1.3 Big Data

The main goal of Artificial Intelligence is to develop machines and codes, which can mimic human intelligence and capabilities, speaking straight and irrevocably we are still to far from such type of systems. But for creating something which can mimic human intelligence and data storing capability seems possible by use of Big Data, simply we can define big data as a term for data sets that are so large and complex that traditional data processing for applications is inadequate.

Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, querying, and updating and information privacy. Any system that uses complex behaviors and knowledgebase for better response and understanding uses big data. Big data usually includes data sets with sizes beyond the ability of commonly used software tools to capture, curate, manage, and process data within a tolerable elapsed time. Below is a clipart which describes how Big Data is interconnected with other tech.

Big data will play a big and major role, for helping app developers and programmers in coding and application development, it can also provide better methods, for creating robust and reusable source codes.

2. Review on Related Research Work

Published papers mentioned in reference [1] Our approach is based on recent work which proposed to use neural networks to map sequences to sequences Building bots and conversational agents has been pursued by many researchers over the last decades, and it is out of the scope of this paper to provide an exhaustive list of references. However, most of these systems require a rather complicated processing pipeline of many stages (Lester et al., 2004; Will, 2007; Jurafsky & Martin, 2009). Our work differs from conventional systems by proposing an end-to-end approach to the problem which lacks domain knowledge. It could, in principle, be combined with other systems to re-score a short-list of candidate responses, but our work is based on producing answers given by a probabilistic model trained to maximize the probability of the answer given some context. Our work is also inspired by the recent success of neural language modeling (Bengio et al., 2003; Mikolov et al., 2010; Mikolov, 2012), which shows that recurrent neural networks are rather effective models for natural language. More recently, work by Sordoniet al. (Sordoni et al., 2015) and Shang et al. (Shang et al., 2015), used recurrent neural networks to model dialogue in short conversations (trained on Twitter-style chats).

2.1 Different Branches of Mantasha

Mantasha is a part of an app called Predicto which is developed by Connect Corporation. Predicto is an Artificial Intelligence application which predict personality, behaviour of a person and then by using that data, predicto helps computer users in different computing tasks, here are some of the branches of (Mantasha+Predicto)

2.1.1 Improving web experience by using digital footprints

Just like fingerprints, every user has its own digital footprint, we can define digital footprint as a map of any user’s online activities, so in predicto there is an artificial intelligence web browser which keeps a track of user’s digital footprint, then by using Connect’s Steam technology it provides contents which user likes the most, therefore it improves user’s web surfing experience, Predicto keeps a track of digital footprints by using these sources:

1. Analysing user’s facebook likes
2. Analysing user’s web browsing history
3. Using conversation logs from mantasha
4. Scanning user’s computer for digital footprints
5. Taking a VR environment test for better understanding

2.1.2 Keeping a track on user’s health by using Mantasha

Mantasha and Predicto keeps a track on user’s health by using Artificial Intelligence and Connect’s Bloom technology, Medical technology is improving day by day but it was never been better, if we introduce evolutionary AI in medical technology, then it can surely do something better, In this module if a user is not feeling healthy or is having any problems with health, s/he has to just input their symptoms or what they are feeling, then by using Big Data and Machine learning algorithms she searches for pre defined templates in database, research journals, medical footprints in online directory and then notifies the user about the correct medical diagnosis and medical treatment, in
case if Mantasha (Predicto) doesn’t finds any record in pre-defined templates she searches for it in medical directory (online footprints) and then saves it in her neural schema for future use.

2.1.3 Predicting future from past actions
Almost no one can predict future from past actions, it’s kind a thing which changes from time to time, but Artificial Intelligence and singularity can do these things with an effort of ease By using Connect’s Neon Technology, Mantasha is able to predict anyone’s future actions on the basis of analysing their past actions.

Methodology:
First of all user will describe his/her past actions through a text document, then Mantasha will analyse the text by using some kind of Fuzzy algorithms then Mantasha will look up in knowledge base for training data templates, and will compare the same actions with previous records, after that possible machine learning algorithm she will respond to user that what should be his/her future action, this module, can help

2.1.5 Mantasha predicts who is going to win the next election
Still it’s hard for human mind to predict who is going to perform better in the upcoming elections, we can guess a bit, but it’s almost impossible to predict perfectly, that who is going to win the upcoming elections, Artificial Intelligence and Data Mining can come handy in this type of situation, Mantasha which is a substitute of Predicto, has a module which can predict that who is going to win the upcoming elections with 85% precision.

Methodology:
User will be connected on Connect’s election Predict site via a web service using Predicto, after that Connect’s web service will access the user’s location to get records of Candidates participating in election, from that particular area, then Connect’s web service will go through knowledgebase and will search for previous works of that candidate in past years, it will rate them either Good or Worst, by using text scraping to analyze the candidate’s and accessing public feedback, after that by using K-Base algorithm, Mantasha will be able to predict that which candidate is going to win the elections.

2.1.6 First of all, a little Chemistry behind how our own brain works
Our own brain is made up of approximately 100 billion nerve cells called Neurons. Neurons have the amazing ability to gather and transmit electrochemical signals -- think of them like the gates and wires in a computer. Neurons share the same characteristics and have the same makeup as other cells, but the electrochemical aspect lets them transmit signals over long distances (up to several feet or a few meters) and send messages to each other. Neurons have three basic parts:

- **Cell body or soma.** This main part has all of the necessary components of the cell, such as the nucleus (which contains DNA), endoplasmic reticulum and ribosomes (for building proteins) and mitochondria (for making energy). If the cell body dies, the neuron dies.

- **Axon.** This long, cablelike projection of the cell carries the electrochemical message (nerve impulse or action potential) along the length of the cell. Depending upon the type of neuron, axons can be covered with a thin layer of myelin sheath, like an insulated electrical wire. Myelin is made of fat and protein, and it helps to speed transmission of a nerve impulse down a long axon. Myelinated neurons are typically found in the peripheral nerves (sensory and motor neurons), while non-myelinated neurons are found in the brain and spinal cord.

- **Dendrites or nerve endings.** These small, branchlike projections of the cell make connections to other cells and allow the neuron to talk with other cells or perceive the environment. Dendrites can be located on one or both ends of a cell. All these neurons work on basis of chemical packages known as neurotransmitter, to transmit and receive various signals from- to brain for learning and observation. Some of the chemicals which neurotransmitter consists includes…

1. Gamma-aminobutyric acid (GABA, GABA<sub>A</sub>-ρ receptor)
2. Carbon monoxide (Heme bound to potassium channels)
3. N-Arachidonoyl dopamine (TRPV1)

3. Planned Coding Assistant Model
The proposed model helps a programmer to develop better source codes, by using artificial intelligence and machine learning
3.1 Assumption
Cloning of source code in a better way depends upon training data and structure of User’s code.

3.2 Lyzer Technology for analyzing source codes
We are working on our Lyzer Technology for over 2 years, it’s still in the Beta phase, but it’s doing something better for us, let’s take a look that what our Lyzer Technology exactly is:

Our Lyzer technology uses Machine learning, Restricted Boltzmann machine algorithms to analyze source codes, which user uploads through a text file, Lyzer technology loads templates from training data for analyzing source codes for errors, and it has some expression generators for identifying logical errors.

3.3 Reusability for Clone source code which is generated
Whenever Mantasha generates a better clone of the source code, from the template which user has uploaded, then she saves that new template in her neural schema, in future whenever new user asks that type of problem, Mantasha compares user’s template with templates which are stored in the neural schema after that if a match is found, Mantasha looks for attributions that which one template is better for generation of better cloned source code, once she completes this lookup, then she uses the template which is better for Cloning of Source code, instead of the one which user has uploaded. So in this way Mantasha creates possibilities for generating better source code clones for over time to time with the help of Machine Learning and artificial intelligence.

Image: Mantasha’s Graph Patterns

4. Work flow
The recent work is completed by the following phases:

(i) Lyzer technology uses text package for analyzing source code
(ii) Resolving errors via K-Base algorithm in neural schema
(iii) Cloning a better source code by using Steam Tech.
(iv) Mapping the code in neural schema for future use

4.1 Lyzer technology uses text package for analyzing source code
Either user can upload a text file package of his / her source code or can type the whole source code as the input, after that Mantasha converts the whole source code into a graph, with connecting nodes to all the logics (this conversion is required for better template generation which will be then saved in Mantasha’s neural schema), after that Mantasha converts the code in machine language to save space, and stores the code in temp. Directory after that she compares each and every single line of code with pre-defined code templates in the knowledgebase for aligning the source code and mapping every node of the source code tree.

4.2 Resolving errors via K-Base algorithm in neural schema
After mapping the code Mantasha replaces it with the one which user had given previously, after that Mantasha passes the code to “Error resolving module” to remove any kind of Syntax and logical errors. For doing so Mantasha reads the whole source code just like a compiler, and if any logical or syntax error found then she compares that error pre-defined templates of previous errors, if any match is found Mantasha uses the same logic which she used previously, but if nothing is found in neural schema then she applies K-Base algorithm to create a new logic for removing errors from that source code (Creating new logics for removing errors could take some time because she creates new logics just from scratch).

4.3 Cloning a better source code by using steam tech.
As I have mentioned earlier, our Steam technology is still in its Beta phase, but it seems like it can help us in generating a better clone of a previously uploaded app source code, it was never been easier to generate a cloned copy of source code with better code structure, but now with our Steam Technology it seems true. After removing all the possible logical and syntax errors Mantasha passes the source code to neural schema where is has to go through with Steam Modulizer which uses training data, machine learning, and research Knowledge Base from internet for generating a better clone of source code with a better code structure from previous one, when doing so it generates graphs, for mapping the code bugs and removing them in realtime.
4.4 Mapping the code in neural schema for future use
After generating a clone of the source code, Mantasha converts the source code tree back in graph and stores it in her knowledge base and neural schema, for future use, well, this is better because by doing so she can learn about new algorithms, code structure, therefore

4.4.1 Future use of Mantasha
Well, Mantasha is supported in several programming languages for now, but we are planning to bring her in real time computing in one year we are also starting a Mantasha Insider Program which will help the developers and programmers to create their own intelligent chatbots

5. Implemented Results
The recent work can be described through the following diagram (Fig 1). The figure also shows the step wise method from left to right.

![Fig 1: DFD with implemented result]

5.2 Generating graphs tree and pointing out data
After the user has uploaded the source code package, then Mantasha converts that package into the graph tree so she can compare it with existing set of commands by using her neural schema, something like this

(Mantasha, generating Genetic codes after training)
6. Conclusion

By this we have successfully simulated the system which implements the first Artificial Intelligence based chatbot which can help application developers in coding new type of apps and computer programs which can create a new future in the world of machine learning and app development. Well, apart from this Mantasha will be able to do more than helping app programmers, it can create new possibilities for unlocking new opportunities in the world of Artificial Intelligence. We are also planning to integrate Mantasha in our Under development Android Humanoid robot, in future but there is still a lot left to integrate her in a robot. As our first of its type, artificial Intelligence operating system is under development we think that we will integrate Mantasha in that too.

7. References