***I. Babich, Master student***
***V. Spivachuk, Candidate of Philology, language advisor***
*Khmelnytskyi National University*

# HOW TO CREATE ARTIFICIAL INTELLIGENCE

The aim of this study was to instruct for creating artificial intelligence, including those who are not familiar with programming. The purpose of this study was defined during the conversation with a friend about his dreams. It was the desire to create the perfect artificial intelligence, whether it's mobile or model program has advanced on the path of the programmer a lot of people. Robots with AI will perform more complex actions: such as daily work, military affairs, entertainment features and others. The problem is that in tons of educational material and the harsh reality of customers, it is the desire has been replaced by a simple desire for self-development. The required material was investigated and based on it has been created a short step by step guide.

Based on this, the person can create from a simple game bot to AI of future standard.

-Chapter 1. Mathematics above all!

When we talk about the creation of at least a simple bot, our eyes are filled with glitter, and in our minds flit hundreds of ideas, that he should be able to do. However, when it comes to implementation, it appears that the key to unlocking the real pattern of behavior is mathematics. Yes, the AI is much more difficult to write applications - some knowledge of design software you do not have enough.

Mathematics - this the scientific springboard on which to build your future programming. Without knowledge and understanding of this theory all the ideas quickly be broken on the interaction with a person because the artificial intelligence is actually no more than a set of formulas. Get comfortable with table lookup, graph theory, big data, and machine learning and others.

-Chapter 2. Language Selection

When a little arrogance knocked literature student, you can begin to practice. Rushes to LISP, or other functional languages is not necessary - the first is to get used to the principles of AI design. To quickly explore and further development, then it is perfectly suitable Python is a widely used high-level programming language that easy to work with it; most commonly used for scientific purposes, it’s convenient for solving mathematical problems with it; you will find plenty of libraries for it, that will facilitate your work.

-Chapter 3. Experiments on AI

Now we go directly to the AI theory. They can be divided into 3 categories:

• Weak AI - Bots, which we see in computer games, or simple improvised assistants like Siri. They either perform highly specialized tasks or are minor, such a complex, unpredictable and any interaction puts them in a deadlock.

• Strong AI - this machine intelligence is comparable to the human brain. To date, there are no real representatives of this class, but the computers like Watson and Deep Blue are very close to achieving this goal.

• Perfect AI - future brain machine that will exceed our ability. It is about the dangers of such developments warn Stephen Hawking, Elon Musk and movie franchise, "Terminator".

Of course, you should start with the most simple bots. To do this, remember the good old game "Tic Tac Toe" using a 3x3 field and try to find out for themselves the basic algorithms of action: the probability of winning if error-free, the most successful places in the field for the location of the figures, the need to reduce the game to a draw, and so on.

Having played a few dozen games, and analyzing their own actions, you should be able to allocate all the important aspects and rewrite them into machine code. If not, keep thinking.

By the way, if you still took up the Python language, you can create a fairly simple robot can be turned to manuals on the Internet. For other languages, such as C++ or the Java, you will also not be difficult to find a material step by step. Sensing that the creation of AI there is nothing supernatural, you can safely proceed to personal experiment.

-Chapter 4: Moving on

Now, when it moved from the dead point, you will probably want to create something more serious. This will help a number of the following resources: Diffbot; Google Cloud Prediction API; Mallet, etc. As you have seen, even from the names, this API, which is enabled with no waste of time to create some semblance of a serious AI.

If you don’t know, API is a set of subroutine definitions, protocols, and tools for building application software. In general terms, it's a set of clearly defined methods of communication between various software components. A good API makes it easier to develop a computer program by providing all the building blocks, which are then put together by the programmer.

-Chapter 5. Working

Now that you have quite a clear idea of how to create and AI than with the use, it is time to display our skills to the next level.

Firstly, you must learn to work with the appropriate libraries of selected programming language. For Python we are considering Scikit-learn, NLTK, SciPy, PyBrain and Numpy. Secondly, will not dispense from the development of functional programming. And most importantly, you can now read the literature on AI with full understanding of the case: Artificial Intelligence for Games by Ian Millington; Game Programming Patterns by Robert Naystorm; AI Algorithms, Data Structures, and Idioms in Prolog, Lisp, and Java by George Luger, William Stbalfild; Computational Cognitive Neuroscience by Randall O'Reilly, Yuko Munakata; Artificial Intelligence: A Modern Approach by Stuart Russell, Peter Norvig.

And yes, all or almost all of the literature on this topic is presented in a foreign language, so if you want to engage in the creation of AI professionally - you need to pull up your English to the technical level. However, this is true for any field of programming, is not it?

The rest of your future development will depend only on the practice and the desire to complicate algorithms. But be careful: perhaps the perfect artificial intelligence is dangerous for mankind?

## REFERENCES

1. URL : https://tproger.ru/sponsored/ai-guide/ (2016, 28 листопада)