

Robotic Machine to Solve the Matrix with Natural Language Processing and Image Processing

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ABSTRACT

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Symbolic is an important part of math. Nowadays for solving symbolic math there is many software applications, but many of them is not used or unknown. In our work, we focus on how the SymPy program works? how python tool is solving symbolic mathematical problems. Step by step proposed work give answer for these questions. Here you can see how SymPy solve Derivatives, Integrals, Series Expansion, Limits, Trigonometric Simplification, Equation Systems, Vector and Matrices, Difl'ereentialEquations.

Keywords : Symboltic Python. SymPy, Derivatives, Limits, Equations, Integra/s, Matrices, Vectors

I. INTRODUCTION

WHAT IS SYMBOLICCOMPUTATION?

Symbolic computation trade in with the computation of mathematical objects symbolically. This means that the mathematical objects acts exactly, not roughly, and mathematical expressions with uncredited variables are left in symbolic form.

A. What is tfymPy?

The Programming Language Python uses the Tool SymPy. SYluPyis capable of computing symbolic expressions with variables. In SymPy, variables are defined using symbols. Variables in SymPy must be defined before they are used. The SymPy is having the ability to do all sorts of computations symbolically. SymPy can calculate derivatives, combinations, limitations, problem solving, working with matriculants, and much more, and do it all figuratively. Includes editing modules, printing such

as 2D print extraction of mathematical formulas, or LATEX, production of physics code, mathematics, combinatorics, theory theory, geometry, combinatorics, logic, and more. There are many computer algebra systems out there. The world wide internet article lists many of them. What makes SYluPy the right choice than other alternatives? First of all, it's completely free. It is an open source. This difference with popular trading systems such as Maple or Mathematics costs hundreds of dollars for licenses. Second, Syymy uses Python language. Most computer algebra programs create their own language But not Sympy. Sympy is completely written in Python, and made entirely of it. That means that if you know the Python language perfectly, it's very easy to start with SYluPy, because you already know the syntax. The Python is a battle-experienced, well-elegant language. The SYluPy developers are assure about their abilities in writing mathematical software,

but originating a whole new programming language is a completely dissimilar thing. An advantage of SymPy is that it is light weight. In addition to being relatively small, it has no dependencies other than Python, so it can be used almost anywhere easily. SymPy focused to be self sufficient system, with all the features implemented in SymPy itself. The SymPy can be used as a library. Many computer algebra programs focus on use in a collaborative environment, but if you wish to be aggressive or self-expanding, you still have to do it. With SymPy, you can easily use it in a Python compatible environment or import it into your Python application. SymPy also provides APIs to make it easier to expand it with your custom functions.

Python Interpreter and a comprehensive general library are freely available in source or binary form on all major platforms from the Python website, <http://www.python.org/>, and can be distributed freely. The same site contains distributions and references to many third-party Python free modules, programs and tools, and additional documentation.

Python Translator is easily expanded with new functions and data types used in C or C++ (or other languages that can be called from C). Python is also suitable as an extension language for custom applications.

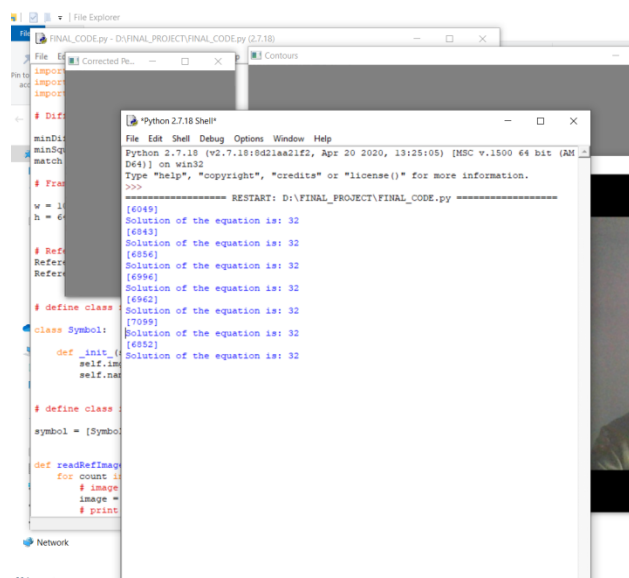
B. Installation

The SymPy CAS can be installed on virtually any computer with Python 2.6 or above. SymPy does not require any special Python modules. The current recommended method of installation is directly from the source files. Alternatively, executables are available for Windows, and some Linux distributions have SymPy packages available. SymPy currently recommends that users install directly from the source files. You will first have to download the

source files via the archive. Download the latest release (tar.gz) from the downloads site and open it with your operating systems standard decompression utility.

After the download is complete, you should have a folder called sympy. From your favorite command line terminal, change directory into that folder and execute the following: Although SymPy does not have any hard dependencies, many nice features are only enabled when certain libraries are installed. For example, without Matplotlib, only simple text based plotting is enabled. With the IPython notebook or qtconsole, you can get nicer LATEX printing by running in icpnting O. The easiest way to find all these libraries in addition to SymP is to install Anaconda, which is a free Python distribution from Continuum Analytics that includes SymPy, Matplotlib, Python, NumPy, and many other useful computer science packages. After installation, it is best to verify that your freshly-installed SymPy works. To do this, start up Python and import the SymPy libraries:

Results



II. CONCLUSION & FUTURE WORK

The proposed Symbolic Python aim is to solve symbolic math problems using SymPy Tool. In our work we gave for each Symbolic math example and solution of program step by step in SymPy . Resource assignment is viewed a Tool in SYlnPy and you can make a solution by using special Python Tools for Symbolic math. The SymPy program defines that solve a symbolic mathematical problem is easy. Wetested each symbolic mathematical problems in this work. Ln SymPy you can solve Derivatives, Limits, Equations, Integrals, Matrices and Vectors.

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