[spaCy+ImageAI+Spin Glass Theory+Z3 API] all in Python Language – An Insight into the World of Natural Language Processing(NLP) towards Understanding Informatics of Finite Automata involving DNA Sequencing & Some Interesting Applications like Gene Chips.

[Exploring – NLP+Spin Glass Theory+AI+Theorem Proving in the Context of Developing Next Generation Bio-informatics]

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[I] Inspiration+Introduction :

https://www.datasciencecentral.com/profiles/blogs/natural-language-processing

spaCy is designed to help you do real work – to build real products, or gather real insights. The library respects your time, and tries to avoid wasting it. – [Source – https://spacy.io/]

ImageAI is State-of-the-art Recognition and Detection AI with few lines of code.

[Source – http://imageai.org/]

"NLP is essentially multidisciplinary:it is closely related to linguistics(although the extent to whichNLPovertlydraws on linguistic theory varies considerably).It also has links to research in cognitive science,psychology, philosophy & maths(especiallylogic).Within CS,it relates to formal language theory,compiler techniques,theorem proving, machine learning and human-computer interaction.Of course,it is also relatedtoAI,though now a days it's not generally thought of as part of AI ".
[Source – NLP – https://www.cl.cam.ac.uk/teaching/2002/NatLangProc/revised.pdf]

https://www.romexsoft.com/blog/nlp-in-healthcare – **NLP in Healthcare**.

https://apiumhub.com/tech-blog-barcelona/natural-language-processing-projects

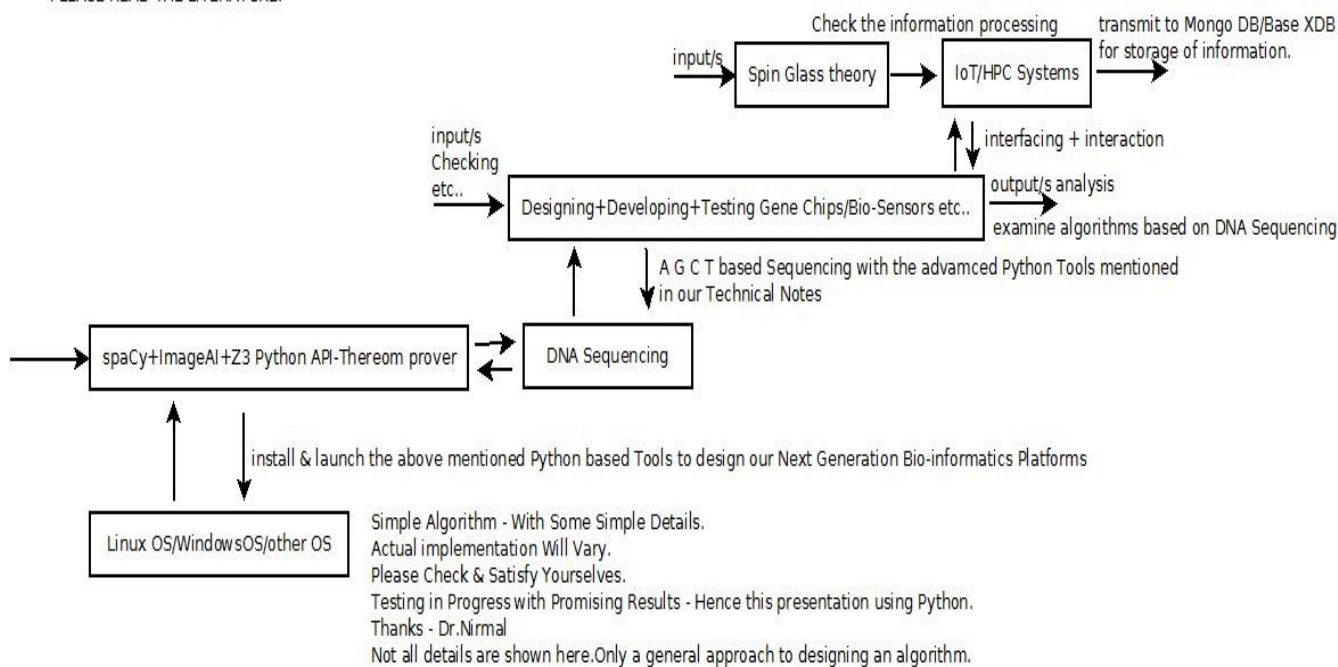*https://www.microsoft.com/en-us/research/group/natural-language-computing*

http://www.physics.rutgers.edu/~haule/681/src_MC/python_codes/ising.py

[II] Python based R&D Informatics Framework Implementation in a Simple Way :

AI BASED NEXT GENERATION BIOINFORMATICS FRAMEWORK TO DESIGN BIO-SENSORS/GENECHIPS USING PYTHON

APPROXIMATE SUGGESTION - IMPLEMENTATION WILL VARY
PLEASE READ THE LITERATURE.

Check the information processing

transmit to Mongo DB/Base XDB
for storage of information.

input/s → Spin Glass theory → IoT/HPC Systems →

interfacing + interaction

input/s
Checking
etc..

Designing+Developing+Testing Gene Chips/Bio-Sensors etc..

output/s analysis

examine algorithms based on DNA Sequencing

A G C T based Sequencing with the advamced Python Tools mentioned
in our Technical Notes

spaCy+ImageAI+Z3 Python API-Thereom prover

DNA Sequencing

install & launch the above mentioned Python based Tools to design our Next Generation Bio-informatics Platforms

Linux OS/WindowsOS/other OS

Simple Algorithm - With Some Simple Details.
Actual implementation Will Vary.
Please Check & Satisfy Yourselves.
Testing in Progress with Promising Results - Hence this presentation using Python.
Thanks - Dr.Nirmal
Not all details are shown here.Only a general approach to designing an algorithm.

[Figure I — Algorithm I : Our Simple Bio-informatics R&D Framework — Testing in Progress]

[III] Related R&D Information ((((via)))) Vixra.org :

[a] https://www.cl.cam.ac.uk/teaching/2002/NatLangProc/revised.pdf

[b] https://spacy.io/

[c] http://imageai.org/

[d] https://pypi.org/project/z3-solver

[e] *ericpony.github.io/z3py-tutorial/guide-examples.htm*

[f] *https://www.infoq.com/news/2010/11/LINQ-Z3*

[g] *hackage.haskell.org/package/z3*

[h] *https://libraries.io/github/Z3Prover/z3*

[i] *https://**stackoverflow.com**/questions/6924653/**has-anyone-tried-proving-z3-with-z3**-itself* ******
https://people.mpi-inf.mpg.de/~jblanche/life.pdf ****

[j] *https://www.springer.com/series/8899*

[k] *https://nlp.stanford.edu* – **NLP Information par excellence**.

[l] *https://**en.wikipedia.org**/wiki/**Spin_glass***

[m] *https://**www.brandeis.edu**/igert/pdfs/dasguptanotes.pdf*

[n] *vixra.org/pdf/1901.0133v1.pdf*

[o] *https://archive.org/details/arxiv-cond-mat0608696* – ***Spin Glass theory & Nanoparticle Applications***.

[p] http://www.math.zju.edu.cn:8080/wjd/notespapers/Barahona.pdf

[q] *https://**rajeshrinet.github.io**/blog/2014/ising-model* **&&**
https://github.com/bdhammel/Ising-Model .

[IV] Acknowledgment/s :

[THE END]