

# Python + HDL Exploration Based on → Migen + MyHDL+ PyHDL + QRNG+ LLVM + Keras → Using High Performance Computing [ HPC ] Heterogeneous Systems.

*Probing Complex FPGAs/Linux OS/LLVM-Specializer/Python ecosystem/Ising Models/Antlr → Towards Next Generation Electronics → To Probe Space + Medicine R&D Domains.*

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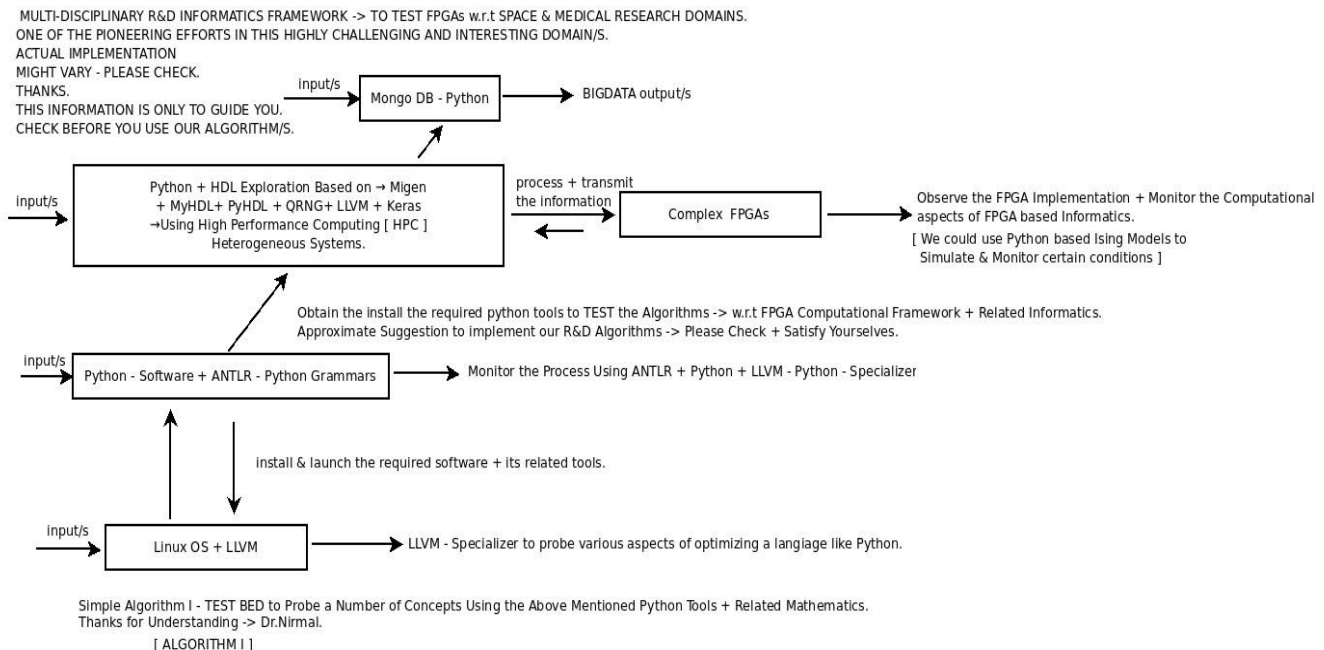
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## [I] Main Idea + Inspiration + Introduction :

Please See the Above Mentioned TITLE → We are Exploring Python for HDL Using Advanced Techniques.

## [II] R&D Informatics Framework Using Python :

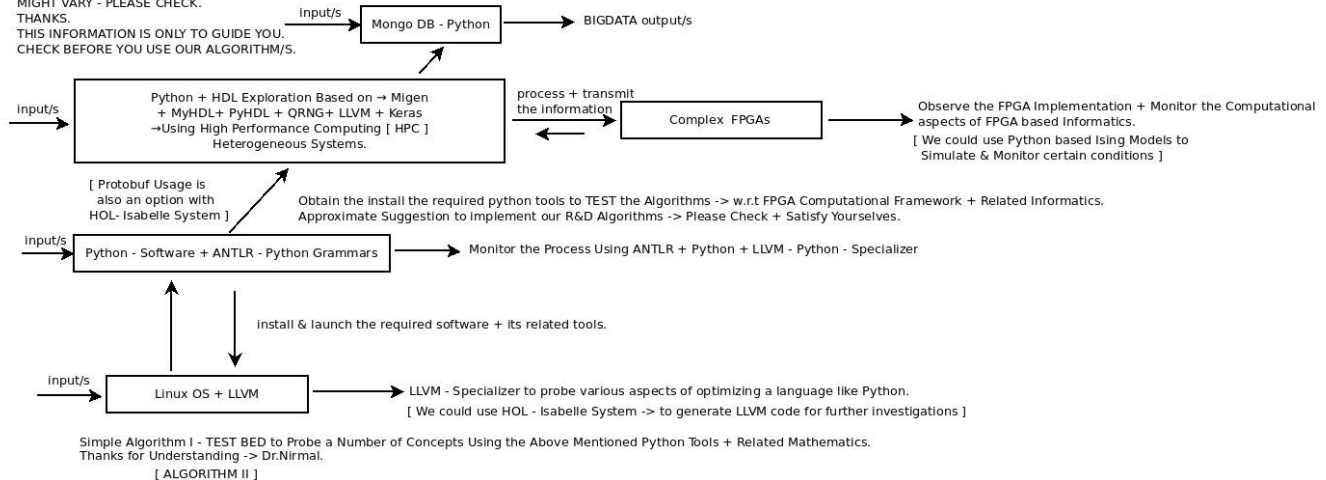
PYTHON BASED ADVANCED INFORMATICS FRAMEWORK -> TO PROBE CHALLENGING ALGORITHMS USING HARDWARE + SOFTWARE + FIRMWARE.



**[ Figure I – A Simple R&D Informatics Framework Using Python + Tools ]**  
**ALGORITHM I**

PYTHON BASED ADVANCED INFORMATICS FRAMEWORK -> TO PROBE CHALLENGING ALGORITHMS USING HARDWARE + SOFTWARE + FIRMWARE.

MULTI-DISCIPLINARY R&D INFORMATICS FRAMEWORK -> TO TEST FPGAs w.r.t SPACE & MEDICAL RESEARCH DOMAINS.  
ONE OF THE PIONEERING EFFORTS IN THIS HIGHLY CHALLENGING AND INTERESTING DOMAIN/S.  
ACTUAL IMPLEMENTATION  
MIGHT VARY - PLEASE CHECK.  
THANKS.  
THIS INFORMATION IS ONLY TO GUIDE YOU.  
CHECK BEFORE YOU USE OUR ALGORITHM/S.



**[ Figure II – A Simple R&D Informatics Framework Using Python + Tools ]**  
**ALGORITHM II**

\* We are also TESTING Protobuf/HOL-Isabelle System based LLVM Code Generation Concepts.

### [III] Useful + Important References :

- [a] <https://www.python.org/>
- [b] <https://pypi.org/project/qiskit-rng/>
- [c] <http://www.myhdl.org/>
- [d] <https://github.com/m-labs/migen>
- [e] <https://github.com/SdNssr/pyhdl>
- [f] <https://github.com/sdiehl/numpile>

[g] <http://dev.stephendiehl.com/numpile/>

[h] <https://m-labs.hk/gateway/migen/>

[i] <https://github.com/tejdnk-2019-ShortNotes>

**[IV] Acknowledgment/s :** Sincere Thanks to all WHO made this happen in my LIFE>  
Non-Profit R&D. Inspire Others Always.

**[ THE END ]**