

**[ Haxe+MLXO-Haxe ML Library/dlib in C++/CLIPS- C Language/CocoALIB-C++ ] based UX design for the IoT/HPC-High Performance Computing Heterogeneous Medical Informatics R&D Frameworks – An Insight into the World of Novel UX Designs.**

[ Exploring C/C++/Ocaml/HAXE+ML → AI/ML/Grobner Bases based Advanced Medical Informatics + Healthcare ]

**Nirmal Tej Kumar**

**Independent Consultant Informatics/AI/Imaging/Photonics/Nanotechnology/HPC R&D.**

**Current Member ante Inst,UTD,Dallas,TX,USA.**

**R&D Collaborator USA/UK/France/Israel/South Korea/BRICS Group of Nations.**

**email id [hmf2014@gmail.com](mailto:hmf2014@gmail.com)**

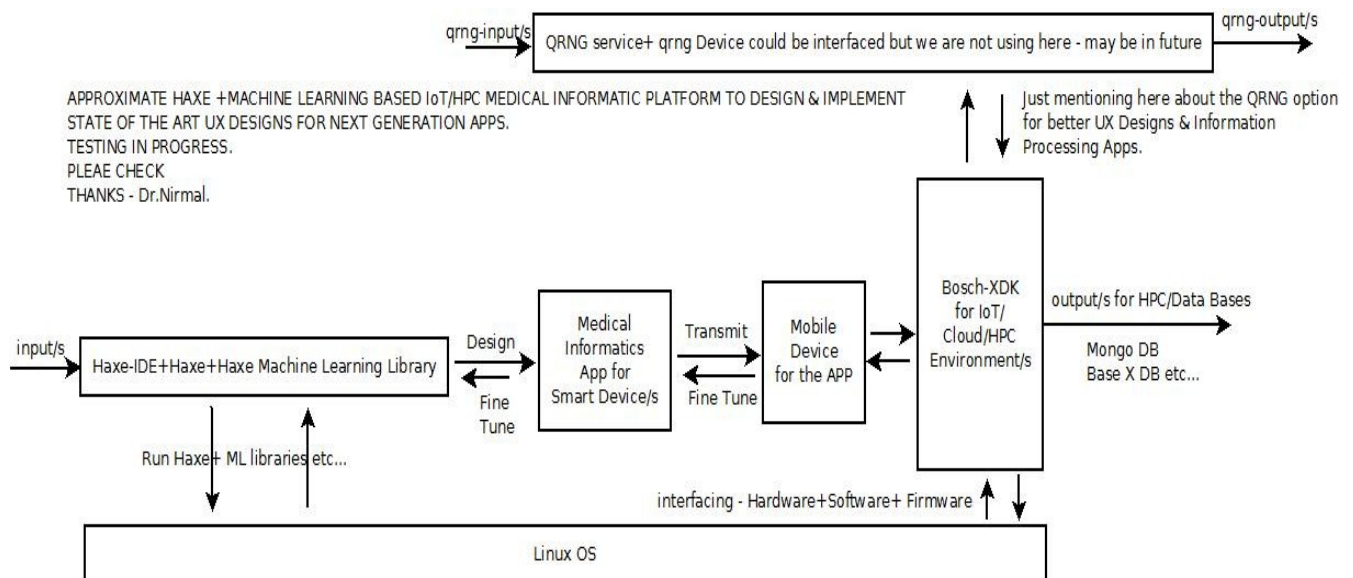
**[I] Inspiration & Introduction :**

<https://bitzesty.com/2017/06/18/ux-design-medical-sector-streamline-user-experience/>

<https://bitzesty.com/2017/07/21/ux-design-medical-sector-optimize-visual-interface/>

<https://bitzesty.com/2017/08/12/ux-design-medical-sector-optimize-language-healthcare/>

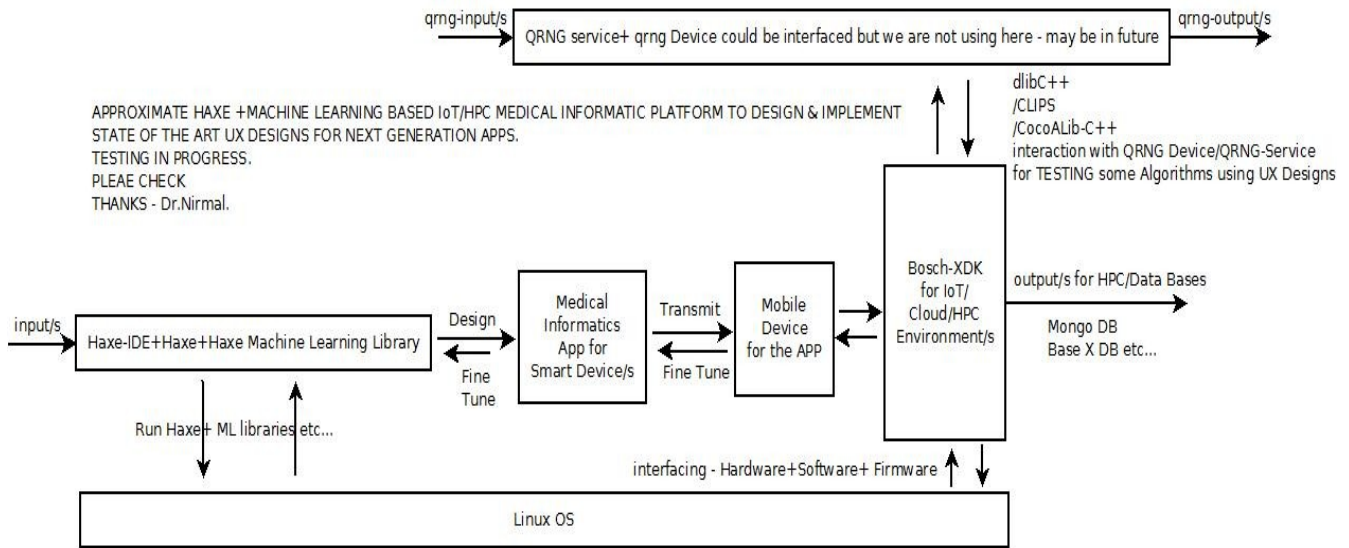
**[II] Haxe based Simple R&D Medical Informatics Framework – Illustrating Algorithms I II & III :**



AI/ML BASED MEDICAL INFORMATIC PLATFORM FOR BETTER UX DESIGN IN THECONTEXT OF IoT/HPC FOR HETEROGENEOUS ENVIRONMENTS. ACTUAL IMPLEMENTATION WILL CERTAINLY VARY - PLEASE CHECK THE LITERATURE THANKS.

**[ Figure I – Algorithm I – HAXE BASED MEDICAL INFORMATIC R&D PLATFORM ]**

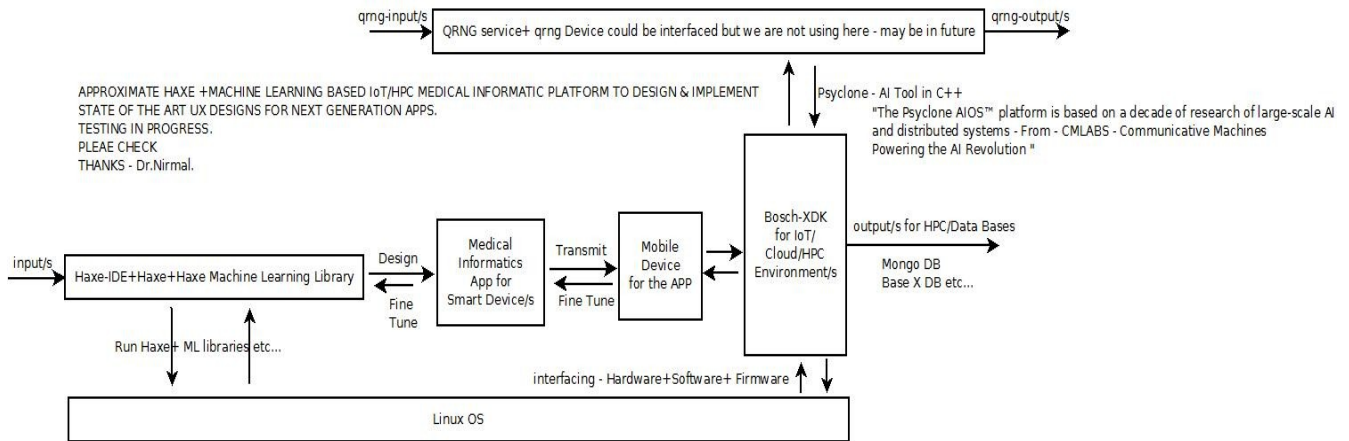
HAXE+MLXO-HAXE MLLIBRARY+DLIB-ML+COCOA LIB+CLIPS-EXPERT SYSTEMS + QRNG-DEVICE OR QRNG SERVICE  
 IN THE CONTEXT OF IoT/HPC HETEROGENEOUS ENVIRONMENTS



AI/ML BASED MEDICAL INFORMATICS PLATFORM FOR BETTER UX DESIGN IN THECONTEXT OF IoT/HPC FOR HETEROGENEOUS ENVIRONMENTS.  
 ACTUAL IMPLEMENTATION WILL CERTAINLY VARY - PLEASE CHECK THE LITERATURE  
 THANKS.

**[ Figure II – Algorithm II- HAXE BASED MEDICAL INFORMATICS R&D PLATFORM ]**

HAXE+MLXO-HAXE MLLIBRARY+DLIB-ML+COCOA LIB+CLIPS-EXPERT SYSTEMS + QRNG-DEVICE OR QRNG SERVICE  
 IN THE CONTEXT OF IoT/HPC HETEROGENEOUS ENVIRONMENTS



AI/ML BASED MEDICAL INFORMATICS PLATFORM FOR BETTER UX DESIGN IN THECONTEXT OF IoT/HPC FOR HETEROGENEOUS ENVIRONMENTS.  
 ACTUAL IMPLEMENTATION WILL CERTAINLY VARY - PLEASE CHECK THE LITERATURE  
 THANKS.

**[Figure III – Algorithm III – HAXE BASED MEDICAL INFORMATICS R&D PLATFORM ]**

## Some Useful Information on AI/ML Concepts + Mathematics for your Algorithms R&D :

[a] **dlib** – Dlib is a modern C++ toolkit containing machine learning algorithms and tools for creating complex software in C++ to solve real world problems. It is used in both industry and academia in a wide range of domains including robotics, embedded devices, mobile phones, and large high performance computing environments. Dlib's open source licensing allows you to use it in any application, free of charge.

[Source – <http://dlib.net/> ]

[b] **Psyclone** –The Psyclone AIOS™ platform is based on a decade of research of large-scale AI and distributed systems. It was built from the ground up with the express goal of creating a new foundation for complex and interactive systems.

[Source – <https://cmlabs.com/psyclone> ]

[c] **CoCoALib** is a free **GPL3 C++ library** for doing Computations in Commutative Algebra. John Abbott and Anna Maria Bigatti –*CoCoALib : a C++ library for doing Computations in Commutative Algebra.*

[ Source– <http://cocoa.dima.unige.it/cocoalib> ]

[d] **CLIPS** – Developed at NASA's Johnson Space Center from 1985 to 1996, the C Language Integrated Production System (CLIPS) is a rule-based programming language useful for creating expert systems and other programs where a heuristic solution is easier to implement and maintain than an algorithmic solution. Written in C for portability, CLIPS can be installed and used on a wide variety of platforms. Since 1996, CLIPS has been available as public domain software.

[Source – <http://www.clipsrules.net/index.html> ]

[e] <http://www.vixra.org/abs/1907.0258> ((via)) **Vixra.org**

[f] <http://www.vixra.org/pdf/1709.0389v1.pdf> ((via)) **Vixra.org**

[g] **Grobner Bases Information & Introduction** – Gröbner Bases:A Short Introduction for Systems Theorists –Bruno Buchberger Research Institute for Symbolic Computation University of Linz,A4232 Schloss,Hagenberg,Austria. You could easily probe **Grobner Bases** using **CocoALIB C++ Software**.

[h] **QRNG Service + QRNG Device** – “Contrary to classical physics, quantum physics is fundamentally random. It is the only theory within the fabric of modern physics that integrates randomness. Quantum Random Number Generators (like the Quantis range from IDQ) use these quantum-random properties to generate truly random numbers”.

[ Source – <https://www.idquantique.com/resource-library/random-number-generation/> ]

## Some Useful Sources on QRNG :

<https://www.comm.utoronto.ca/~hklo/QRNG/Quantoss.html>

<https://www.nanalyze.com/2017/02/quantum-random-number-generator-qrng>

<https://pypi.org/project/qrng>

<https://qt.eu/understand/underlying-principles/qrng>

[qrng.physik.hu-berlin.de](http://qrng.physik.hu-berlin.de)

<https://www.insidequantumtechnology.com/qrngs-real-market-drivers>

<https://qrng.anu.edu.au>

<https://www.idquantique.com/random-number-generation/products/quantis-qrng-chip>

[i] **OCAML/CAML** – “OCaml is an industrial strength programming language supporting functional, imperative and object-oriented styles . The *OCaml system* is an industrial-strength implementation of this language, featuring a high-performance native-code compiler (ocamlc) for 9 processor architectures (IA32, PowerPC, AMD64, Alpha, Sparc, Mips, IA64, HPPA, StrongArm), as well as a bytecode compiler (ocamlc) and an interactive read-eval-print loop (ocaml) for quick development and portability.

The OCaml distribution includes a comprehensive standard library, a replay debugger (ocamldebug), lexer (ocamllex) and parser (ocamlyacc) generators, a pre-processor pretty-printer (camlp4) and a documentation generator (ocamlDoc)” .

[ Source – <https://ocaml.org> ]

[ Source – <http://caml.inria.fr/>]

### [III] R&D Related Information on Mathematics+Software Used :

[a] <https://uxdesign.cc/an-intro-to-machine-learning-for-designers-5c74ba100257>

[b] <https://github.com/nihils/MLXO> && <http://nihil.io/>

[c] <https://haxe.org/>

[d] <https://uxdesign.cc/academic-papers-all-ux-designers-should-read-e4afd9e5ddeg>

[e] <https://haxe.org/documentation/introduction/compiler-targets.html>

[f] <https://xdk.bosch-connectivity.com>

[g] [https://things.eu-1.bosch-iot-suite.com/dokuwiki/doku.php?id=examples\\_tutorial:xdk:start](https://things.eu-1.bosch-iot-suite.com/dokuwiki/doku.php?id=examples_tutorial:xdk:start)

[h] <https://www.bosch-iot-suite.com/tutorials/xdk-cloud-connectivity>

[i] <http://www.vixra.org/abs/1905.0529> – HAXE Usage Notes from Nirmal.

[j] <http://www.vixra.org/abs/1909.0236> – HAXE Usage Notes from Nirmal.

[k] [http://www.vixra.org/author/nirmal\\_tej\\_kumar](http://www.vixra.org/author/nirmal_tej_kumar)

[l] <https://www.semanticscholar.org/author/Nirmal-Tej-Kumar/12354503/suggest>

### [IV] Acknowledgment/s :

Special Thanks & Best Rgds to all WHO made this possible in my LIFE. Non-Profit R&D.

[ THE END ]