An Introduction to the Theory of Random Matrices & Higher Order Logic(HOL) - Applications to Space + Medical Physics Based on the Statistical Behavior of the Eigenvalues of Random Matrices.
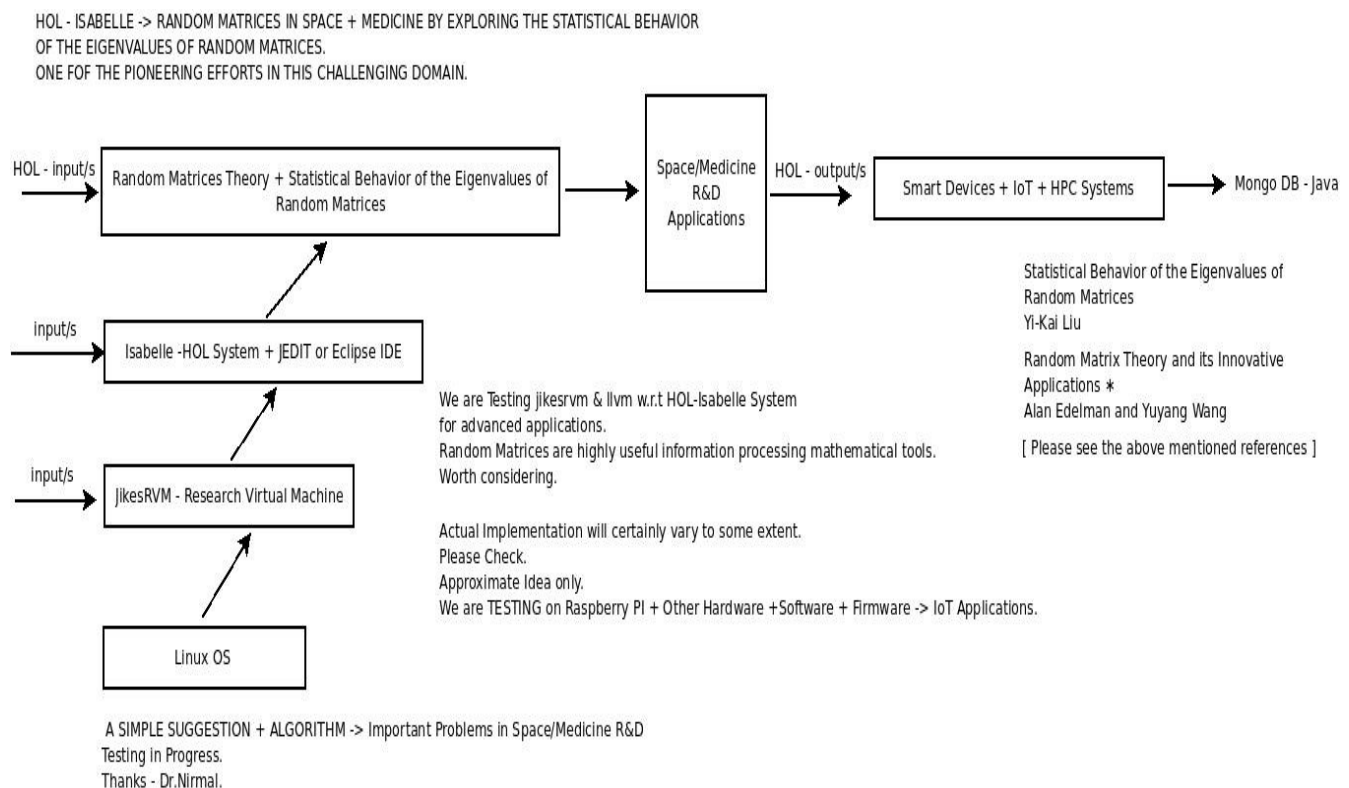
Nirmal

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[I] Introduction & Inspiration :

[a] Statistical Behavior of the Eigenvalues of Random Matrices Yi-Kai Liu Mathematics Junior Seminar, Spring 2001 Princeton University.

[b] Random Matrix Theory and its Innovative Applications ∗ Alan Edelman and Yuyang Wang.

[II] Informatics & Software Framework Design With Description :

HOL - ISABELLE -> RANDOM MATRICES IN SPACE + MEDICINE BY EXPLORING THE STATISTICAL BEHAVIOR OF THE EIGENVALUES OF RANDOM MATRICES.
ONE FOF THE PIONEERING EFFORTS IN THIS CHALLENGING DOMAIN.

HOL - input/s → Random Matrices Theory + Statistical Behavior of the Eigenvalues of Random Matrices → Space/Medicine R&D Applications → HOL - output/s → Smart Devices + IoT + HPC Systems → Mongo DB - Java

input/s → Isabelle -HOL System + JEDIT or Eclipse IDE

input/s → JikesRVM - Research Virtual Machine

Linux OS

We are Testing jikesrvm & llvm w.r.t HOL-Isabelle System for advanced applications.
Random Matrices are highly useful information processing mathematical tools.
Worth considering.

Actual Implementation will certainly vary to some extent.
Please Check.
Approximate Idea only.
We are TESTING on Raspberry PI + Other Hardware +Software + Firmware -> IoT Applications.

Statistical Behavior of the Eigenvalues of Random Matrices
Yi-Kai Liu

Random Matrix Theory and its Innovative Applications ∗
Alan Edelman and Yuyang Wang

[Please see the above mentioned references]

A SIMPLE SUGGESTION + ALGORITHM -> Important Problems in Space/Medicine R&D
Testing in Progress.
Thanks - Dr.Nirmal.

[Figure I - Simple Algorithm I – Random Matrices & Information Processing]

References : [a] https://github.com/tejdnk-2019-ShortNotes Non-Profit R&D. Thanks.