Understanding + Exploring Racket/Macros-RKT/FFI/Minsky Machines Using C Code/NLP → To Probe Advanced Imaging Algorithms involving [cryo-EM] Images & [MRI Scans] w.r.t Testing of BSOFT/AFNI/Camellia Lib Software Using AI based Cameras/Raspberry PI/Bosch XDK-IoT Device/Zerynth IoT Devices + HPC - Linux Heterogeneous Environment/s.

[For Rapid Prototyping of R&D Ideas Using → C + FFI +Racket + GCCS]

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[I] Main Idea + Inspiration + Introduction :

"Racket is a general-purpose, multi-paradigm programming language based on the Scheme dialect of Lisp. It is designed to be a platform for programming language design and implementation. [9] In addition to the core Racket language,Racket is also used to refer to the family of programming languages [10] and set of tools supporting development on andwith Racket. [11] Racket is also used for scripting, computer science education, and research.Racket - The Racket platform provides an implementation of the Racket language (including a runtime system, [12] libraries, and JIT compiler) along with the DrRacket integrated development environment (IDE) written in Racket. [13]" →

[Source - https://en.wikipedia.org/wiki/Racket_(programming_language)]

[a] BSOFT : "Bsoft is a collection of programs and a platform for development of software for image and molecular processing in structural biology. Problems in structural biology are approached with a highly modular design, allowing fast development of new algorithms without the burden of issues such as file I/O. It provides an easily accessible interface, a resource that can be and has been used in other packages.The evolution of Bsoft is unique in the sense that it started from different aims and intentions than the typical image processing package.

In stead of solving a particular image processing problem, Bsoft developed to deal with the disparities in approaches in other packages, as well as supporting efforts to handle large volumes of data and processing tasks in heterogeneous environments. As such, the layout and concepts within Bsoft are significantly different from other programs doing the same kind of processing. In the following sections I'm presenting the background and philosophies of Bsoft, which are still evolving, and may continue for some time."
[**Source - https://lsbr.niams.nih.gov/bsoft/]**

[b] AFNI Software : "**AFNI** (**A**nalysis of **F**unctional **N**euro**I**mages) is a leading software suite of C, Python, R programs and shell scripts primarily developed for the analysis and display of multiple MRI modalities: anatomical, functional MRI (FMRI) and diffusion weighted (DW) data. It is freely available (both as open source code and as pre-compiled binaries) for research purposes. The software is made to run on virtually any Unix system with X11 and Motif displays. Binary packages are provided for MacOS and Linux systems such as Fedora, CentOS/Red Hat and Ubuntu (which includes the Windows Subsystem for Linux)."

[Source - https://afni.nimh.nih.gov/]

[c] The Camellia Library : "he Camellia Library is an open source Image Processing & Computer Vision library. Written in plain C, it is cross-platform (Unix / Linux, Windows) and robust. It already includes a lot of functions for image processing (filtering, morphological mathematics, labelling, warping, drawing, project/backproject, color conversion, loading/saving images, etc.), most of them being highly speed-optimized. It is also doxygen-documented and examples of use are provided. As it uses the CamImage/IplImage structure to describe images, it is a good replacement to the popular but discontinued Intel IPL library and a good complement to the OpenCV library.

This open source software library is an outcome of the Camellia european project (IST-2001-34410). It was developed by the Ecole des Mines de Paris (ENSMP), in coordination with the other partners of the projects (Philips Electronics Nerderland and Renault France etc). This library was put to Open Source to favor the dissemination of the results obtained in the Camellia project. We hope that new contributions will help to maintain this library at the state of the art."

[Source - http://camellia.sourceforge.net/]

[d] GCCS – Gentle Compiler Construction System → For Minsky Machines Generation & NLP.

[Source - http://gentle.compilertools.net/index.html]

[e] NLP – Natural Language Processing → Lot of info online – Please Check. Thanks.

[https://towardsdatascience.com/your-guide-to-natural-language-processing-nlp-48ea2511f6e1]

[II] Racket Based R&D Informatics Framework → Probe Advanced Imaging Algorithms :
      You could EASILY derive your own Informatics Framework/s Using :

[a] Take a look @ : https://github.com/tejdnk-2019-ShortNotes/2021-Nir-Informatics/blob/main/Racket-Java-Img-Nir-2021-GA.pdf

[b] https://github.com/tejdnk-2019-ShortNotes/2021-Nir-Informatics/blob/main/Racket-Java-Img-Nir-2021.pdf

[c] https://github.com/tejdnk-2019-ShortNotes/2021-Nir-Informatics/blob/main/Python-U96-Zynq-Nir-21.pdf

[III] Important + Useful References :

[a] https://github.com/tejdnk-2019-ShortNotes – Very useful.

[IV] Acknowledgment/s :

[V] Conclusion/s With Future Perspectives → Important Methods Using : **C + FFI + Racket.**

[THE END]