

# [ Rust & Java + Automatic Differentiation[AD] w.r.t Machine Learning - What a Combination for Next Generation Image Processing Software R&D !!!! ]

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

Testing Bayesian Inference on Design of [ Kubernetes + Image Processing + AI ] w.r.t Advanced Informatics R&D. Bayesian inference for Parameter Estimation to Probe Image Processing -> in Space + Medicine + Telecoms + HPC Systems R&D.

<https://blog.frankel.ch/start-rust/7/>

## [II] R&D Informatics Framework Using RUST + Photon/Web-assembly + Java/JVM Tools :

Rust & Java + AD w.r.t Machine Learning & Advanced Image Processing Using Bayesian Inference Informatics Framework

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Input/s -> Bayesian Inference concepts -> RUST
                                         AD
                                         JVM -> Photon -> Smart Devices + IoT + HPC Heterogeneous Systems -> Space/Medicine/Telecoms etc..-> MongoDB in Java
                                                                    BIGDATA
                                                                    Analysis.

Simple Idea : { Exploring + Testing + Understanding Automatic Differentiation [AD] in Machine Learning w.r.t Design of Kubernetes & Imaging Algorithms Using
RUST Programming Language ((via)) JNI in JVM Computing Environment/s -A Simple Appreciation of Java + JikesRVM - Research Virtual Machine [RVM]
+ JamVM + Graal VM + JLANG Using : Smart Devices + IoT + HPC Heterogeneous Systems &
Bayesian Inference Related Informatics }.
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Figure I - Algorithm I - Advanced Informatics Testing Framework -> Using RUST + JAVA+ JVM Applications.  
Thanks for understanding - Dr.Nirmal.

## [ Figure I - Algorithm I - Image Processing Using RUST + JAVA + Other Related Tools ]

Please fine tune our Image Processing Algorithms presented in the following references authored by us.

Actual Implementation will certainly vary to some extent. Please Check & Satisfy Yourselves before you TEST our Ideas and Suggestion.

## [III] Important + Useful References for Your Information :

[a] <https://www.rust-lang.org/> && [b] <https://polyglot-compiler.github.io/JLang/>

[c] <https://enzyme.mit.edu/> && <https://www.jikesrvm.org/>

[d] <https://www.graalvm.org/> && <http://jamvm.sourceforge.net/>

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

[f] [https://github.com/tejdnk-2019-ShortNotes/2021-Nir-Informatics/blob/main/RUST-MLApps-Nir-2021.pdf\\*](https://github.com/tejdnk-2019-ShortNotes/2021-Nir-Informatics/blob/main/RUST-MLApps-Nir-2021.pdf*)

[g] [https://www.semanticscholar.org/author/N.-Kumar/12354503\\*](https://www.semanticscholar.org/author/N.-Kumar/12354503*)

[h] [https://github.com/tejdnk-2019-ShortNotes/tejdnk-Space-Medicine-Informatics-github.io/blob/master/ZF-Ruby-PwBImgHOL2021.pdf\\*](https://github.com/tejdnk-2019-ShortNotes/tejdnk-Space-Medicine-Informatics-github.io/blob/master/ZF-Ruby-PwBImgHOL2021.pdf*)

[i] [https://github.com/tejdnk-2019-ShortNotes/tejdnk-Space-Medicine-Informatics-github.io/blob/master/Rust-Photon-Movidius-Nir-21.pdf\\*](https://github.com/tejdnk-2019-ShortNotes/tejdnk-Space-Medicine-Informatics-github.io/blob/master/Rust-Photon-Movidius-Nir-21.pdf*)

## [IV] Acknowledgment/s :

Sincere Thanks to all WHO made this happen in my LIFE. Non-Profit R&D. Inspire Others Always.

## [V] Conclusion/s + Future Perspectives :

One of the PIONEERING R&D Efforts in this highly challenging domain of Image Processing + Informatics based on RUST + JAVA w.r.t Space + Medicine + Telecoms + High Performance Computing Heterogeneous Systems. We hope to see more papers in the near future. This Short Technical Communication is written in FREE STYLE for RAPID COMMUNICATION. Hence, we are not following any specific formats.

[ THE END ]