Case Study - Image Recognition – OCaml + C + LLVM+ Owl + AI + Smart Devices + IoT + HPC Heterogeneous Systems R&D.

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[I] Main Idea + Inspiration + Introduction :

"InceptionV3 is a widely-used DNN architecture for image classification that can attain significant accuracy with small amount of parameters. It is not invented out of thin air. The development using DNN to perform image recognition is a stream that dates back to more than 20 years ago. During this period, the research in this area is pushed forward again and again in various work. In this chapter, we first introduce how image classification architectures are developed up until Inception. Surveying these related work will help us to understand how Inception architectures are built."

[https://ocaml.xyz/book/case-image-inception.html]

Thanks - Dr.Nirmal.

ONE OF THE PIONEERING R&d EFFORTS IN THIS HIGHLY CHALLENGING DOMAINS OF S&T.

[II] R&D Informatics Framework Using : OCaml + C + Movidius + Other Tools →

OCAML + C + LLVM + SMART DEVICES + IOT + HPC HETEROGENEOUS SYSTEMS R&D MEDICAL/ELECTRON MICROSCOPY IMAGE PROCESSING PLATFORM

TESTING IN PROGRESS AT THE TIME OF SUBMISSION. BIG DATA + Related Analysis. OCaml based Inception V3 Concepts to Process MRI Scans Smart Devices + IoT + HPC Heterogeneous Systems Display on Devices/HPC Systems Monitor the Images Using Movidius + Rasp PI + AI Medical Images MRI scans/ TEST the quality using Movidius + Machine Learning Concepts. C + OCaml + LLVM cryo-EM Images Intel Movidius + Rasp PI install & launch the required software like : OCaml + Owl + C + LVM to TEST Advanced Image Processing Algorithms Approximate Idea Only -> Actual Implementation Will Certainly Vary. Thanks - Dr.Nirma Linux OS input/s Our Simple TEST Algorithm Using OCaml + Owl + C + LLVM -> Developing Next Generation Medical Imaging Platforms for BIGDATA + Related Informatics

[Figure I – Simple Algorithm I – Advanced Image Processing Framework]

[III] Important & Useful References:

- [a] https://hub.packtpub.com/what-makes-functional-programming-a-viable-choice-for-artificial-intelligence-projects/
- [b] https://github.com/tejdnk-2019-ShortNotes/tejdnk-Space-Medicine-Informatics-github.io
- [c] https://medium.com/@matriXanger/image-recognition-with-owl-a5a6d0caef33
- [d] https://movidius.github.io/blog/
- [e] https://ocaml.org/manual/intfc.html
- [f] https://llvm.org/
- [g] https://blog.janestreet.com/using-python-and-ocaml-in-the-same-jupyter-notebook/

[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 :

OCaml + C + LLVM + Owl + Imaging Mathematics → is quite useful in probing the frontiers of Advanced Medical Imaging/cryo-EM Imaging w.r.t Movidius + Rasp PI + Bosch XDK IoT + HPC + Inception V3 as an **Inspirational Image Processing Architecture.**

[THE END]