Q*cert – CoqTheoremProver[CTP]/OCaml as Bio-informatics Platform in the Context of Understanding Protein Folding Mechanisms Based on General Purpose Libraries – A Simple Interesting Insight Into the Promising, Challenging & Interesting World of Protein Engineering and Applications.

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[1] Introduction & Inspiration :

“Coq is a formal proof management system. It provides a formal language to write mathematical definitions, executable algorithms and theorems together with an environment for semi-interactive development of machine-checked proofs. Typical applications include the certification of properties of programming languages(e.g. the CompCert compiler certification project, or the Bedrock verified low-level programming library), the formalization of mathematics(e.g. the full formalization of the Feit-Thompson theorem or homotopy type theory) and teaching. “

[Source : https://ocaml.org/] & &
[Source : http://dimacs.rutgers.edu/~alantha/papers2/alantha-bill-bc.pdf]
[Source : https://discuss.ocaml.org/t/ocaml-for-data-science/1878]

“We present Q*cert, a platform for the specification, verification, and implementation of query compilers written using the Coq proof assistant. The Q*cert platform is open source and includes some support for SQL and OQL, and for code generation to Spark and Cloudant. “

(PDF) Q*cert: A Platform for Implementing and Verifying Query Compilers. Available from:

[Source : https://researcher.watson.ibm.com/researcher/view_group.php?id=8299]
[Source : https://ncatlab.org/nlab/show/Coq]
[Source : https://querycert.github.io/doc.html]
[Source : https://www.irif.fr/~sozeau/repos/coq/order/] - Excellent information.


[Source: http://vixra.org/author/nirmal_tej_kumar [29-31]]

[II] Q*cert/General Purpose Libraries Based Protein Folding Informatics & Data Processing Framework:

![Approximate Informatics Framework - Simple Suggestion - Black Diagram](https://www.irif.fr/~sozeau/repos/coq/order/Lattice.v)

[Figure I – Approximate Protein Folding Informatics Framework]

***[Source: The Knaster-Tarski theorem on complete lattices]***


[https://www.irif.fr/~sozeau/repos/coq/order/Lattice.v]


[http://users.umiacs.umd.edu/~hal/software.html]
[III] Conclusion/s With Future Perspectives :

A simple but powerful informatics platform was/is presented to the readers to probe the frontiers of Protein Folding Mechanisms based on Q*cert/Coq/Ocaml – Software. To the best of our knowledge, this is one of the pioneering R&D attempts from us. Hope our readers will certainly consider our technical short notes and take this R&D one more step forward.

"Lattice proteins are highly simplified computer models of proteins which are used to investigate Protein Folding “ - Wiki.

[IV] Acknowledgment/s :

Pure Academic R&D Only. Special thanks to all who made this happen.
[ Non-Profit R&D]

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