

Project: PluMA 2.0 Machine Learning Pipeline Refactor

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PROBLEM

Bioinformaticians cannot reuse internal stages of existing pipelines often resulting in time reinventing the wheel that could be more optimally used to advance research. PluMA attempts to fix this problem by providing a pool where bioinformaticians can prototype algorithms and wrap them as plugins that can be reused by other users in other pipelines.

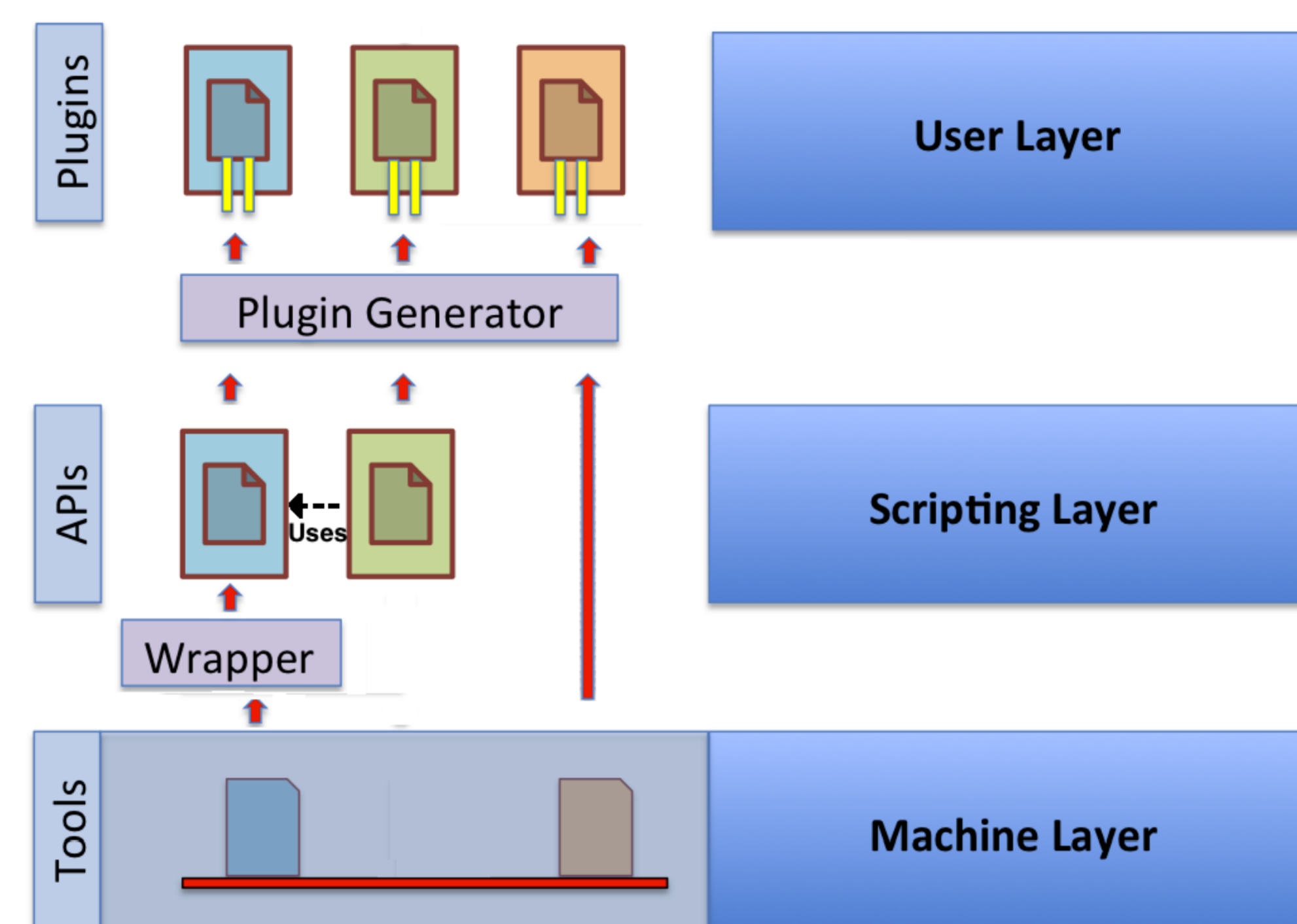
CURRENT SYSTEM

The inherently interdisciplinary bioinformatics landscape currently contains a great deal of pipelines, often implemented as single large scripts of functions.

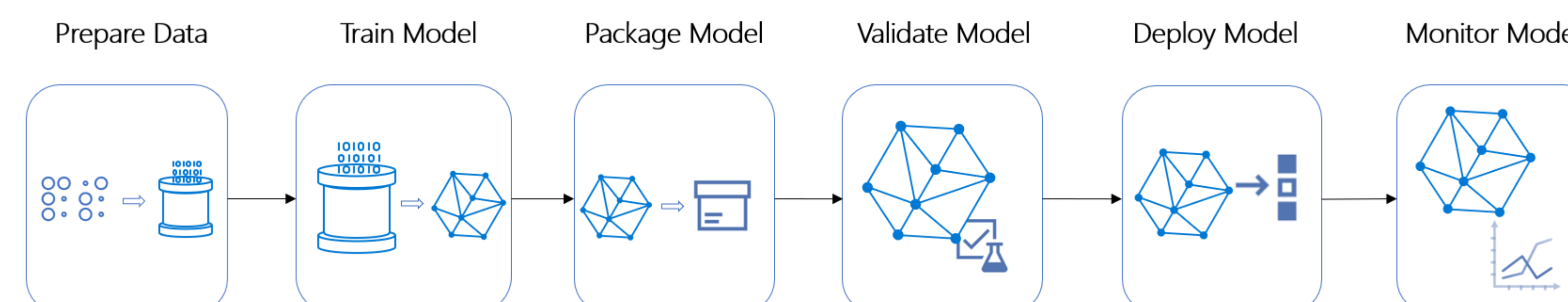
REQUIREMENTS

Properly refactor machine learning pipelines developed by collaborators with BioRG as a series of plugins to make compatible with PluMA

SYSTEM DESIGN



OBJECT DESIGN



IMPLEMENTATION



VERIFICATION

Files were tested during the processes of debugging and modularization to verify that they run as well as to check for other errors that may arise. Pipelines that were built at the end were tested to verify that they run.

SUMMARY

My contribution to the project involved debugging and modularizing files in the Flood-Cas folder. The process of modularization involved refactoring the code in the files and writing methods for the different sections of the code. The process resulted in the creation of pipelines for LSTM, GRU, and RNN machine learning models.

REFERENCES

Research materials provided by Dr. Trevor Cickovski of Bioinformatics Research Group at Florida International University

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