PROJECT DESIGN PHASE-I

SOLUTION ARCHITECTURE

Date	30 September 2022
Team ID	PNT2022TMID16016
Project Name	Early Detection of Chronic Kidney Disease using Machine Learning
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- The best technological solution to identify early Chronic Kidney Diseases is magnetic resonance imaging (MRI) based on nanoparticles. We employ machine learning methods because the project is still in development.
- To address the non-uniform distribution, we first apply class balancing. Next, feature ranking and analysis are carried out. Finally, numerous ML models are trained and assessed based on different performance metrics to select a solution with a greater accuracy.
- Development phases:
    - Step 1: Data pre-processing.
    - Step 2: Features Analysis.
    - Step 3: Comparative Evaluation of various models.
    - Step 4: Performance Evaluation.
- Requirements: A dataset of people who are diagnosed with kidney failure with the attributes like Diastolic Blood Pressure, Albumin level, Glucose, Blood Urea, Serum Creatinine, Sodium, Potassium, etc.
- Based on the past specifications of Chronic Kidney Disease prediction analysis.

Example - Solution Architecture Diagram:

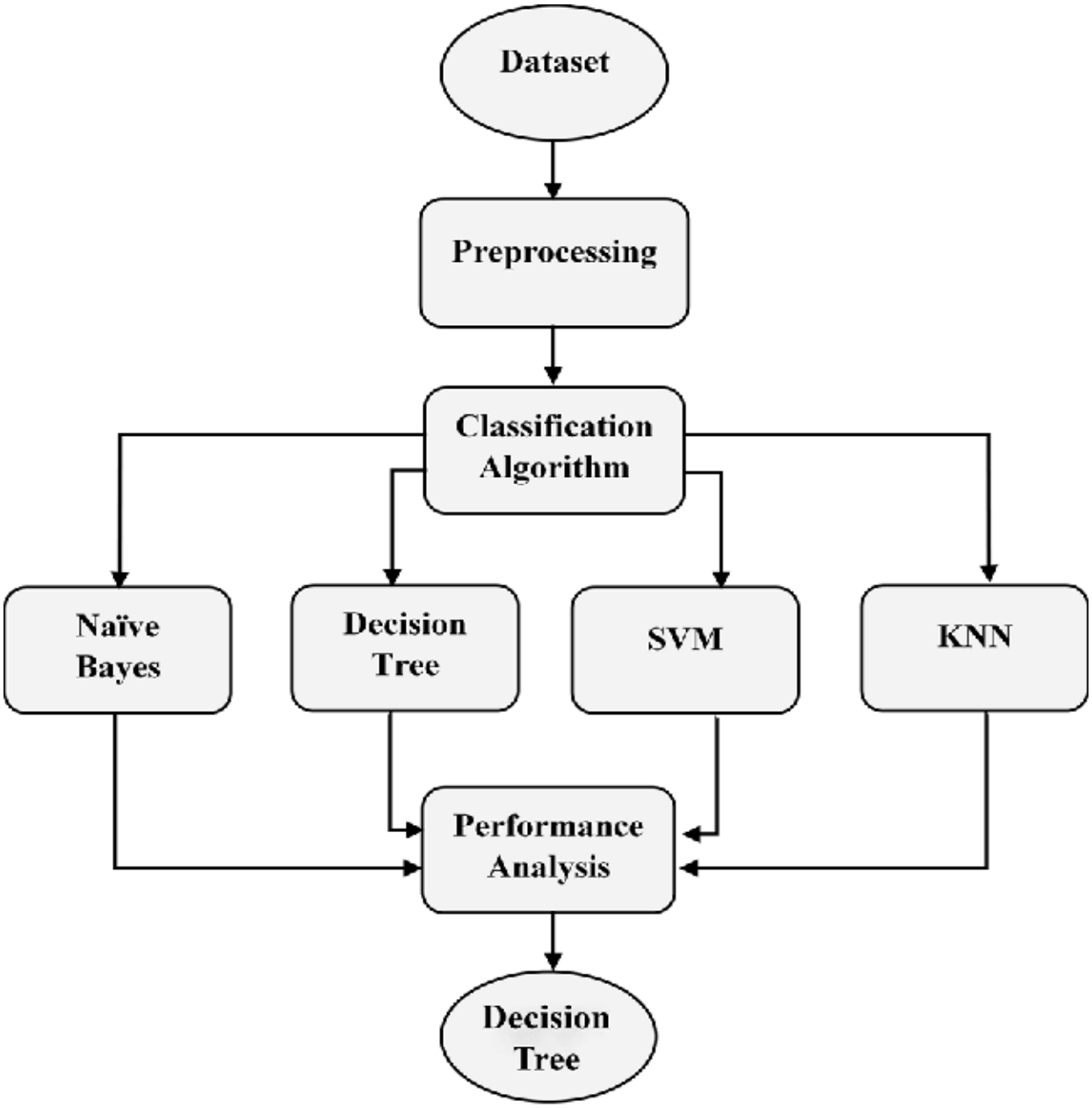

Figure 1: Architecture and data flow of the Early Chronic Kidney Disease Prediction.

Reference:

https://d3i71xaburhd42.cloudfront.net/ba70f17940762056889e187be3cdee1d8406e97c/2-Figure1-1.png