Metabolomics - based machine learning method for the discovery and characterization of biomarkers implicated in Non-Alcoholic Fatty Liver Disease (NAFLD)

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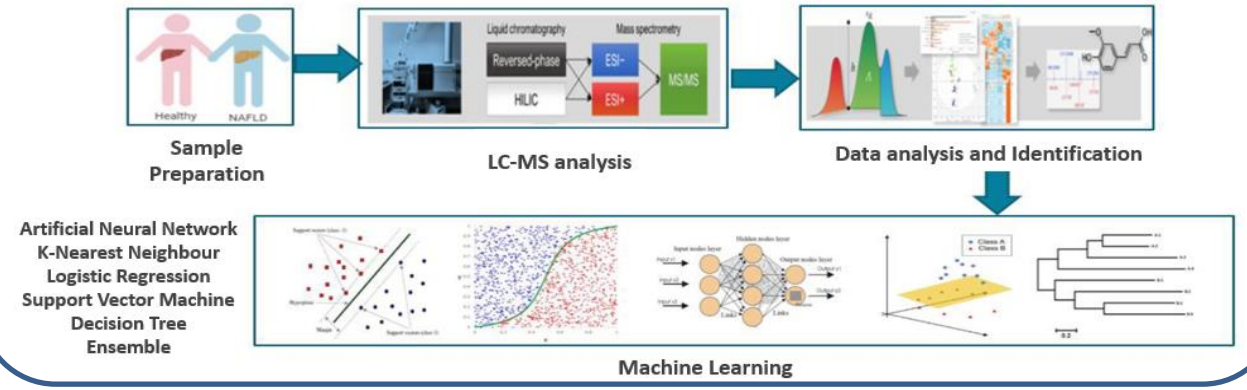
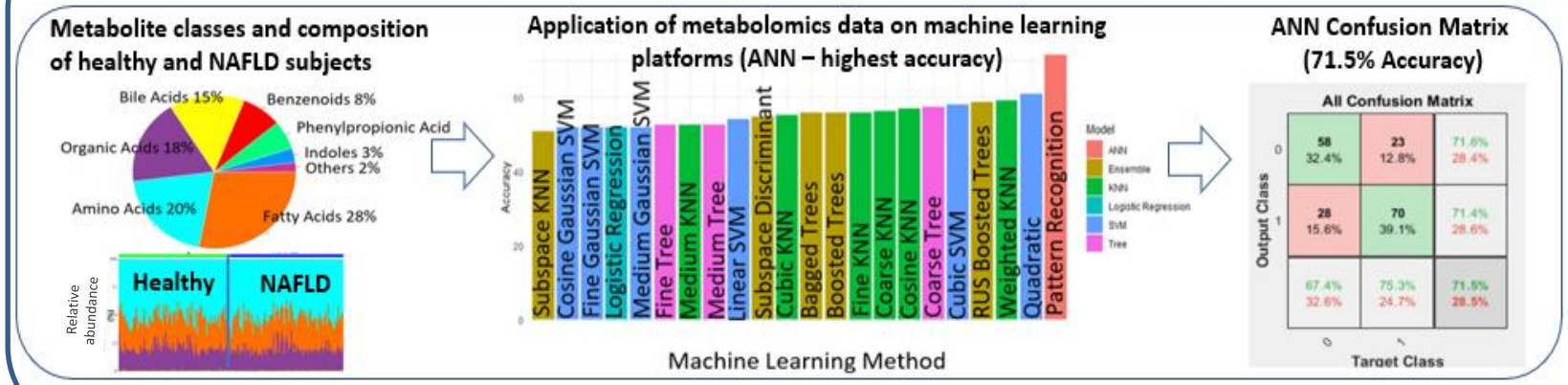
Introduction

- Nonalcoholic fatty liver disease (NAFLD) is the **most common** chronic liver disease worldwide.
- However, the **diagnostic approaches** for NAFLD detection is **challenging** due to the limited availability of non-invasive biomarkers.
- **Metabolomics coupled to machine learning** can pave way to identify diagnostic biomarkers, understand disease mechanisms, and evaluate the treatment of various diseases.

Methodology



Results and discussion



- Of the 123 measured metabolites, 32 were identified as optimal to discriminate between NAFLD and control.
- ANN pattern recognition model has the highest accuracy in correctly classifying the subjects with and without NAFLD.
- The study demonstrates the potential of ANN for NAFLD metabolomics data classification in realistic situations

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