Algorithm 1 RFRE (*Random Forest Rule Extraction*)

 # Creating random forest rule-set
rf ← RandomForestGeneration
extractedRules ← [ ]
for *t* **in** *rf* **do**
    treeRules ← [ ]
    for *rule* **in** *t* **do**
        treeRules ← *treeRules* + *rule*
    end for
    extractedRules ← *extractedRules* + *treeRules*
end for

 # Creating co-variance matrix for the rule-set
n ← (number of features × 2) + (number of classes)
Map ← *n* × *n* matrix of zeros
for *rule* in *extractedRules* **do**
    if feature *i* and feature *j* in *rule* **then**
        $Map_{ij} \leftarrow Map_{ij} + 1$
        $Map_{ji} \leftarrow Map_{ji} + 1$
    end if
end for

 # Rule extraction from co-variance matrix
w, *v* ← Eigenvalues of *Map*, Eigenvectors of *Map*
finalRules ← {}
for *vec* in *v* **do**
    newRule ← **rule_creation**(*vec*)
    if newRule meets add criteria **then**
        finalRules ← *finalRules* + newRule
    end if
end for
return *finalRules*