

JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION

TECHNOLOGY

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MAJOR PROJECT SYNOPSIS

SMART TALENT RESUME RANKER

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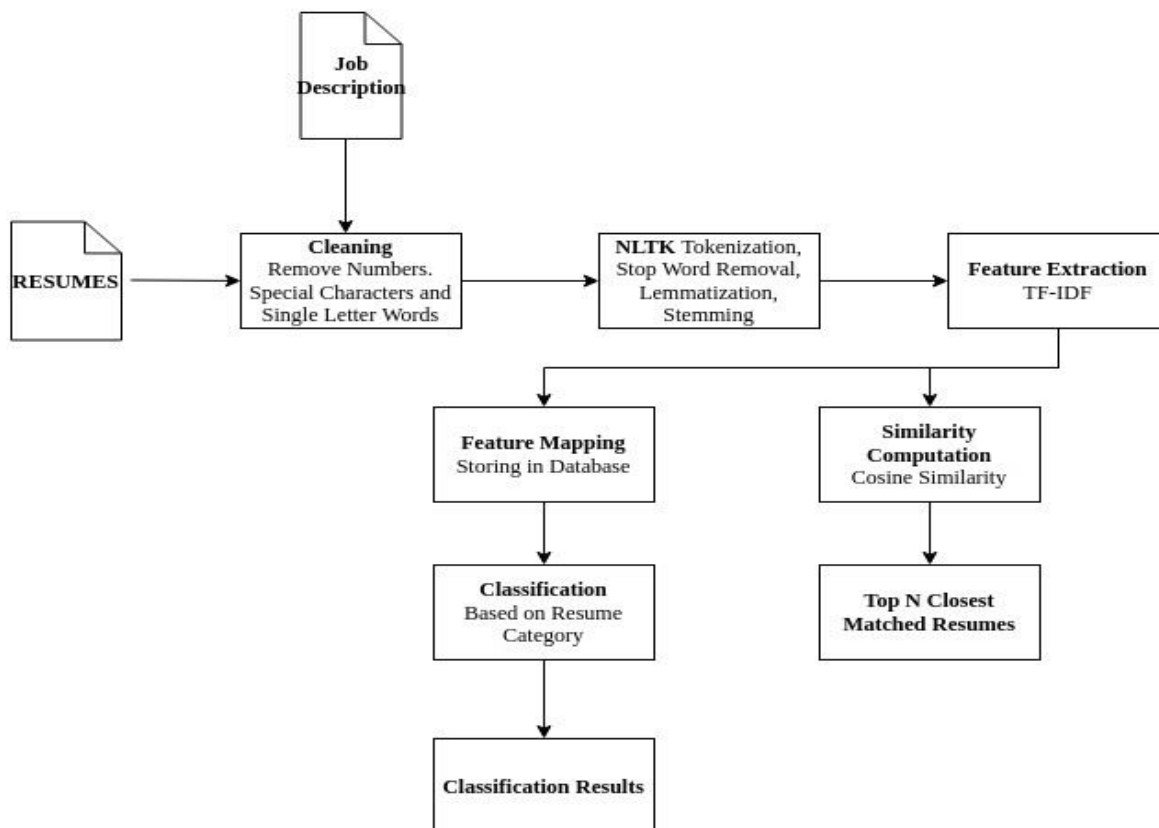
Enrollment Nos: 17104011, 17104012, 17104018

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Problem Statement : We frequently search for Jobs through various online platforms, but mostly the companies have a pile of resumes to look at and in that scenario our resume often gets neglected even if we have the required skills. To address this situation, our project aims to use Machine Learning for ranking the candidates based on their resumes for a particular job description. The set of resumes along with a job description will be loaded as the input and correspondingly the analysis will be carried out to predict the best suited candidates.

Working : Our major focus would be first to extract information from the given resumes in pdf/doc format as its structure varies largely on the preference of the user. Then the algorithms would be applied on the extracted data. Data cleaning would be of prime importance in this case. After which Natural Language Processing and Ranking the resumes would be our target.

The workflow is given below :



Database : NoSql (MongoDB)

Algorithms :

Classification Algorithms

Cosine Similarity

NLTK (Tokenization, Lemmatization, Named Entity Recognition NER)

Tables :

Category Table (**CategoryId**, CategoryName)

Resume Table (**ResumeID**, ResumeName, CategoryId)

Job Description (**JDId**, JDName, CategoryId)

Resume Table Structure

```
{
  "id" : String,
  "categoryId" : Number,          # category id table
  "experienceYears" : Number, # Resume:Experience in no.
    "skills" : Array,            # Resume:Person's skills
    "education" : {
      "highSchool" : {
        "passoutYear" : Number,    # Year
        "percentage" : Number      # Percentage Marks
      },
      "Intermediate" : {
        "passoutYear" : Number,    # Year
        "percentage" : Number      # Percentage Marks
      },
      "bachelors" : {
        "passoutYear" : Number,    # Year
        "GPA" : Number             #Cumulative GPA
      }
    },
    # Resume: Persons score
  "email" : String,
  "name" : String,
  "phoneNumber" : String,
}
```

JD table Structure

```
{
  "id" : String,
  "category" : String,          # Web/Android/Full Stack/IOS/ SDE
  "experience" : Number,        # JD: min experience required
  "skills" : {
    "required":Array,
    "optional":Array
  },                            # JD: required skills
  "education" : {
    "highschool" : {
      "passoutYear" : Number,    # Year
      "percentage" : Number      #Percentage Marks
    },
    "intermediate" : {
      "passoutYear" : Number,    # Year
      "percentage" : Number      #Percentage Marks
    },
    "bachelors" : {
      "passoutYear" : Number,    # Year
      "GPA" : Number             #Cumulative GPA
    }
  },                            # JD: min required
  "profileTitle" : String,      # JD: Post offer
  "company" : String            # JD: company
}
```