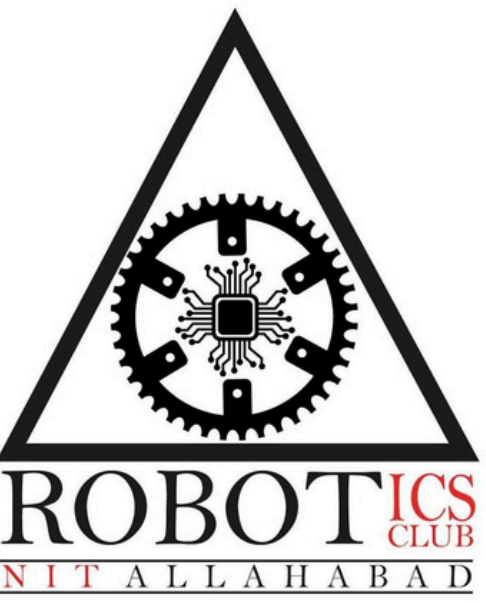




MOTILAL NEHRU NATIONAL INSTITUTE OF TECHNOLOGY ALLAHABAD

APLYTIC - AI POWERED RESUME ANALYSER



SUMMER PROJECT 2024

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ABSTRACT

The hiring process is becoming increasingly complex, as HR departments are overwhelmed with large volumes of resumes and recommendations that require in-depth analysis. This paper presents **Aplytic**, a comprehensive AI system that automates the resume screening process.

By leveraging Natural Language Processing (NLP), Machine Learning (ML), and graph-based algorithms Aplytic assesses resumes, verifies skill claims, and generates final candidate scores.

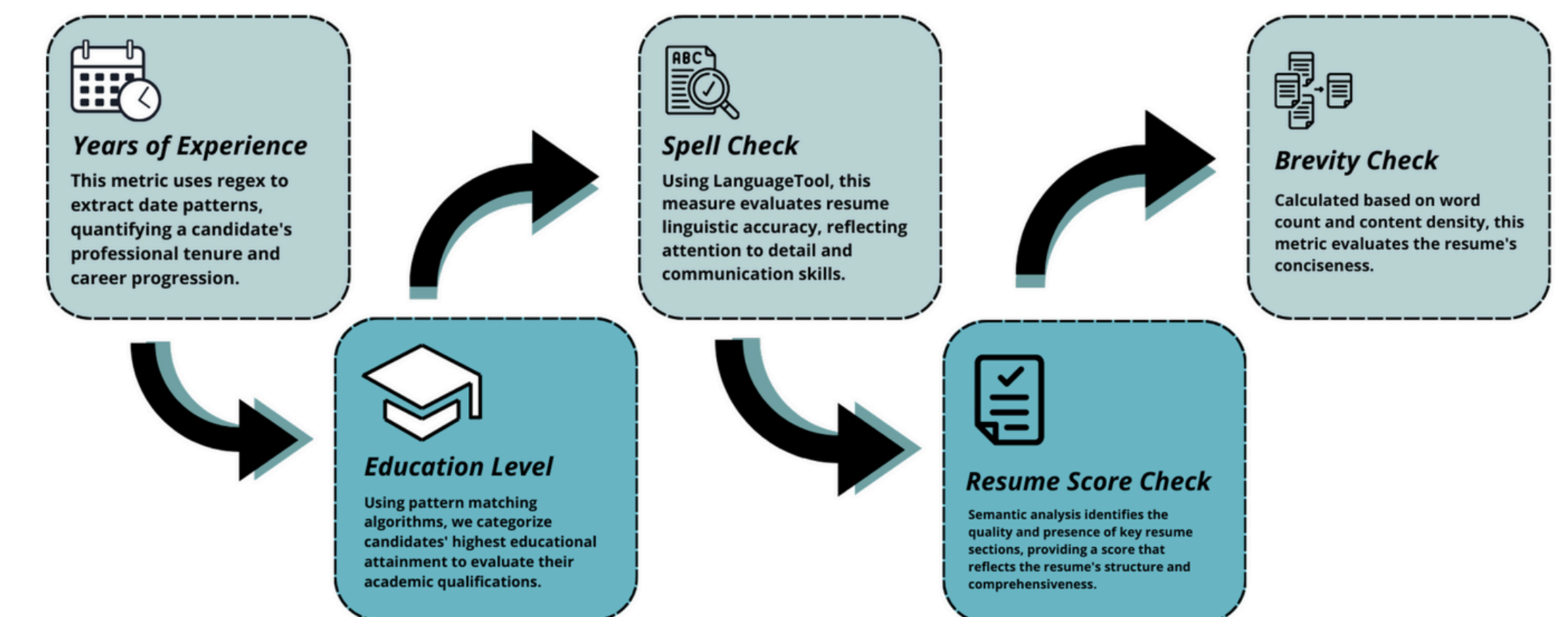
FEATURES

- Streamlines resume extraction from ZIP
- Uses spaCy and TextBlob for text processing
- Achieved 95% precision in extracting experience, education, and 50+ skills
- Matched resumes to JDs using scikit-learn, TF-IDF vectorization and cosine similarity

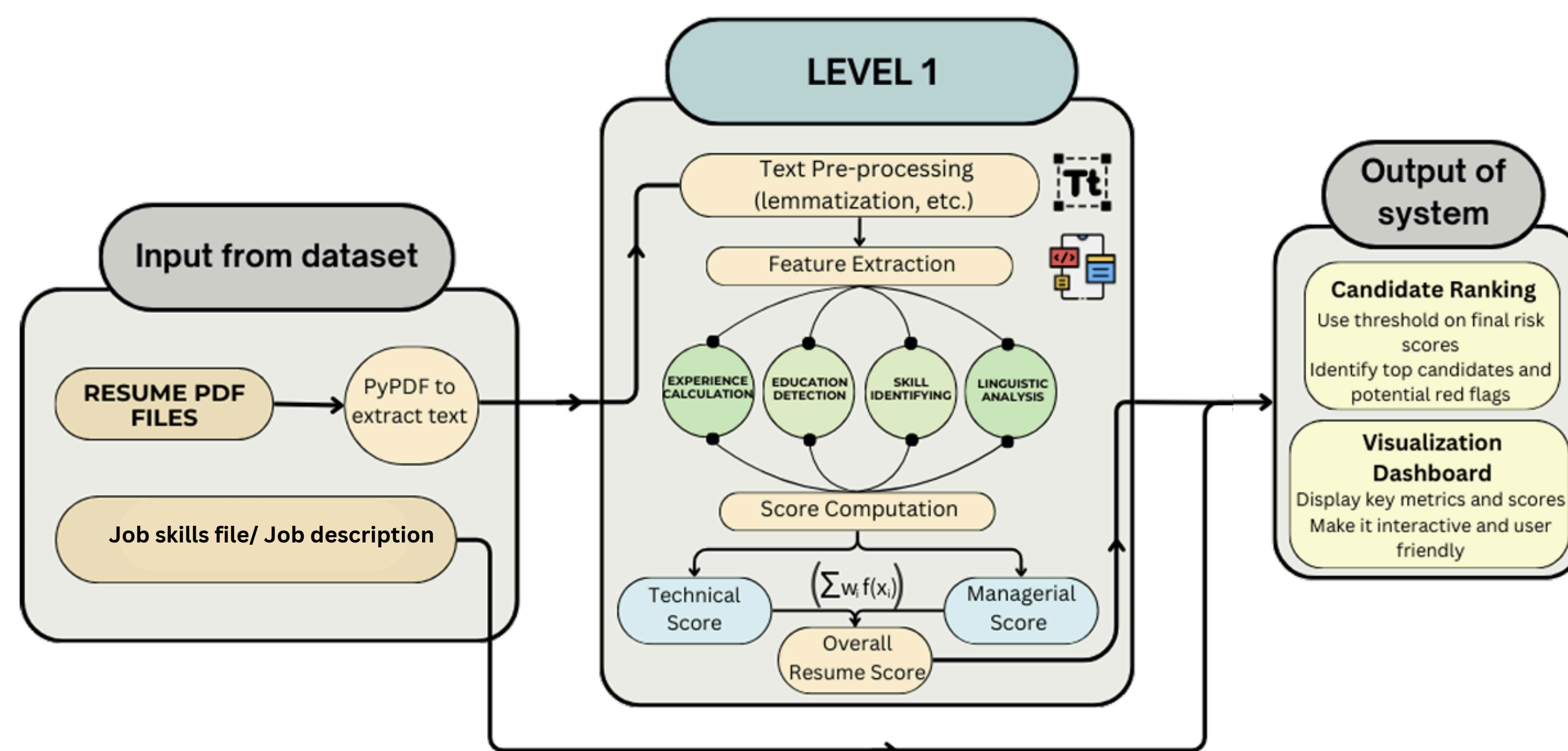
TECH STACK

spaCy, scikit-learn, PyPDF2, pandas, NLP, RegEx, BERT, GPT, LanguageTool

EVALUATION CRITERIA



WORKFLOW DIAGRAM



SOURCE CODE AND VIDEO



HOW IT WORKS AND APPLICATION

- Tokenization and Parsing: We use spaCy and BERT to parse and tokenize the resumes, extracting relevant sections such as "Education," "Work Experience," and "Skills."
- Named Entity Recognition (NER): A custom-built NER model was trained using labeled resume data to detect key entities
- Content Quality Analysis: Using TF-IDF vectors and BERT-based word embeddings, Aplytic evaluates the technical depth and assigns higher scores to resumes that concisely present relevant experience and skills
- Experience Quantification: We extract the duration of work experience.
- Education Relevance: Education data is compared to industry norms, and degrees from reputable institutions are given slight weight increases.
- Skill Matching: Skills listed in resumes are compared against industry-specific skill databases.
- Grammar and Spelling Checks: Resumes with good grammar and spelling were given higher scores using NLP-based tools like LanguageTool. Poor grammar was penalized to reflect the candidate's professionalism.