

# **GENERATIVE AI-POWERED RESUME ANALYZER**

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# INTRODUCTION:

The Generative AI-Powered Resume Analyzer is designed to streamline the resume screening process using advanced AI techniques. The goal is to automatically extract key data from resumes, evaluate AI/ML experience, and provide a structured and ranked output, all while ensuring accuracy, speed, and scalability.

## APPROACH

### **Resume Data Extraction:**

- **PDF Parsing:** The system uses Python libraries such as pdfplumber to extract content from resumes in PDF format. This ensures that even resumes with different layouts are parsed accurately.
- **Key Field Identification:** Essential fields such as Name, Contact Details, University, Year of Study, Course, CGPA/Percentage, and Skills are identified and extracted. This process relies on both pattern recognition and NLP techniques to ensure accurate data extraction.

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## **Generative AI Scoring:**

- Gen AI & AI/ML Experience Evaluation: The experience related to Generative AI and AI/ML is evaluated using a custom scoring mechanism:
  - 1 (Exposed): Basic exposure to concepts and tools.
  - 2 (Hands-on): Practical experience through projects or internships.
  - 3 (Advanced): Work on cutting-edge technologies like Agentic RAG or Evals.
- This scoring is automated based on the context and relevance of the extracted content related to Generative AI and AI/ML technologies.

## **Batch Processing:**

- The system is optimized for batch processing, enabling the efficient handling of multiple resumes (up to 100) in parallel. This is achieved through Python's multiprocessing module, ensuring timely output generation even when processing large volumes of resumes.

## **Output Generation:**

- Excel Format: The final output is structured in an Excel file, including mandatory fields (e.g., Name, Contact, University) along with the experience scores and additional insights.
- Ranking: While not part of the core task, a Total Score and Ranking feature have been added for better evaluation and analysis of the candidates. This helps assess resumes based on AI/ML experience and other factors.

## INNOVATIVE FEATURES



- **Few-shot Learning:** The system leverages a few-shot learning approach to adapt to various resume formats. By training the model with a small set of diverse resume examples, it is able to generalize well to resumes with different layouts and structures.
- **Generative AI for Contextual Understanding:** The use of Generative AI helps in not just extracting structured data, but also in understanding the context of the information (e.g., understanding the depth of AI/ML experience) to assign appropriate experience scores.
- **Custom Scoring System:** The experience scoring system (1–3 scale) provides a deeper insight into candidates' hands-on experience with AI/ML, helping recruiters make better-informed decisions.

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## NO GPT-3/4



This system avoids using GPT-3 or GPT-4, which are paid services, by relying on open-source machine learning models and custom algorithms for all functionalities. This ensures scalability and accessibility for users while maintaining high accuracy.

## MY CONTRIBUTION

I designed and developed the Generative AI-Powered Resume Analyzer, focusing on accurate data extraction, AI/ML experience scoring, and batch processing. I also introduced the Ranking and Total Score feature to improve candidate analysis, enhancing the overall system's effectiveness.

**Disclaimer:**

*Once the output file is generated, it is recommended to delete the existing output for the next run to ensure accurate results and prevent overwriting of data. This ensures that the system functions smoothly during subsequent processing of resumes.*