

PFAI (lab)

Project Documentation

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CV Checker Documentation

1. Project Overview

CV Checker is a web-based application that allows users to upload their resumes (PDF or TXT format) and receive an automated, AI-generated analysis of their CV. The app leverages OpenAI's GPT-4.1-mini model to provide actionable feedback on content clarity, skills presentation, experience descriptions, and role-specific improvements. The goal is to help job seekers enhance the quality and effectiveness of their CVs.

2. Key Features

- **File Upload:** Users can upload CVs in PDF or TXT formats.
- **Job Role Specification:** Users can optionally provide the job role they are applying for to receive role-specific suggestions.

- **AI-Powered Analysis:** Uses OpenAI's GPT-4.1-mini model to summarize and provide constructive feedback on the CV.
 - **PDF and TXT Support:** Automatically extracts text from PDF and TXT files.
 - **User-Friendly Interface:** Built with Streamlit, providing a simple and interactive web interface.
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3. Technology Stack

- **Frontend:** Streamlit
 - **Backend:** Python
 - **AI Integration:** OpenAI GPT-4.1-mini API
 - **File Handling:** PyPDF2, io
 - **Environment Management:** dotenv for loading environment variables
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4. Installation and Setup

1. **Clone the repository:**

```
git clone <repository-url>  
cd <repository-folder>
```

2. **Create a virtual environment** (optional but recommended):

```
python -m venv venv  
source venv/bin/activate # Linux/Mac  
venv\Scripts\activate # Windows
```

3. Install dependencies:

```
pip install -r requirements.txt
```

4. Set OpenAI API Key:

Create a `.env` file in the root folder with the following content:

```
OPENAI_API_KEY=your_openai_api_key_here
```

5. Run the Streamlit app:

```
streamlit run app.py
```

5. Usage Instructions

1. Open the web app in your browser after running Streamlit.
 2. Upload your CV in **PDF** or **TXT** format.
 3. Enter the **job role** you are applying for (optional).
 4. Click the **Analyze CV** button.
 5. View the AI-generated summary and feedback on your CV.
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6. Code Overview

6.1 File Upload

The app supports uploading PDF and TXT files. For PDFs, [PyPDF2](#) is used to extract text from each page. TXT files are read directly.

```
def extract_text_from_pdf(file):
```

```

pdf_reader = PyPDF2.PdfReader(file)

text = ""

for page in pdf_reader.pages:

    if page.extract_text():

        text += page.extract_text() + "\n"

return text


def extract_text_from_file(uploaded_file):

    if uploaded_file.type == "application/pdf":


        return extract_text_from_pdf(io.BytesIO(uploaded_file.read()))


    else:

        return uploaded_file.read().decode("utf-8")

```

6.2 OpenAI Integration

The app uses the **OpenAI Responses API** to generate CV feedback.

```

from openai import OpenAI


client = OpenAI(api_key=OPENAI_API_KEY)

response = client.responses.create(
    model="gpt-4.1-mini",
    input=prompt,
    max_output_tokens=800,
)

```

6.3 Streamlit Interface

Streamlit is used for creating a simple, interactive web interface with file upload, text input, and button functionalities.

```
uploaded_file = st.file_uploader("Upload your CV (PDF or TXT)",  
type=["pdf", "txt"])  
  
job_role = st.text_input("Enter the job role you are applying for")  
  
analyze = st.button("Analyze CV")
```

7. Error Handling

- The app checks if the uploaded file is empty or unreadable and displays an error message.
 - General exceptions are caught and displayed using `st.error()` to help users troubleshoot issues.
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8. Future Enhancements

- **Multiple File Format Support:** Add support for DOCX and other common CV formats.
- **Detailed Skill Analysis:** Highlight missing or underrepresented skills for specific roles.
- **Interactive Feedback:** Provide clickable suggestions for improving each section of the CV.
- **Downloadable Summary:** Allow users to download the AI-generated feedback as a PDF.