Project 19: Research Paper Key Points Extractor

Description:

This tool extracts the key takeaways from research papers—covering objectives, methods, findings, and conclusions. It's perfect for summarizing complex studies into simple, structured summaries for faster reading and comprehension.

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research_paper_extractor.py

```
import openai
import os
import gradio as gr

# Load your OpenAI API key securely
openai.api_key = os.getenv("OPENAI_API_KEY")

# Function that summarizes research papers into key sections
def extract_research_key_points(paper_text):
    # Use a system message to guide the assistant's behavior
    messages = [
        {
            "role": "system",
            "content": (
                "You are a research assistant. Your job is to extract the key
                "Structure the summary into sections: Objective, Methods, Resu
                "Keep it concise, clear, and jargon-free for general understan
            )
        },
        {
            "role": "user",
            "content": f"Summarize this research paper:\n\n{paper_text}"
        }
    ]

    try:
        # Make the call to OpenAI's API with the messages
        response = openai.ChatCompletion.create(
            model="gpt-3.5-turbo",  # GPT-4 can also be used for deeper unders
```

```
            messages=messages
        )

        # Extract the content and return the structured summary
        return response['choices'][0]['message']['content'].strip()

    except Exception as e:
        # Handle and display errors
        return f"Error: {str(e)}"

# Create a Gradio interface
iface = gr.Interface(
    fn=extract_research_key_points,                    # Function to extract k
    inputs=gr.Textbox(lines=20, placeholder="Paste the full text of a research
    outputs="text",                                    # Output summary
    title="📄 Research Paper Key Points Extractor",    # Title of the app
    description=(
        "Paste a research paper or abstract to get structured key points. "
        "Outputs include Objective, Methods, Results, and Conclusion—great for
    )
)

# Launch the app in a web browser
iface.launch()
```