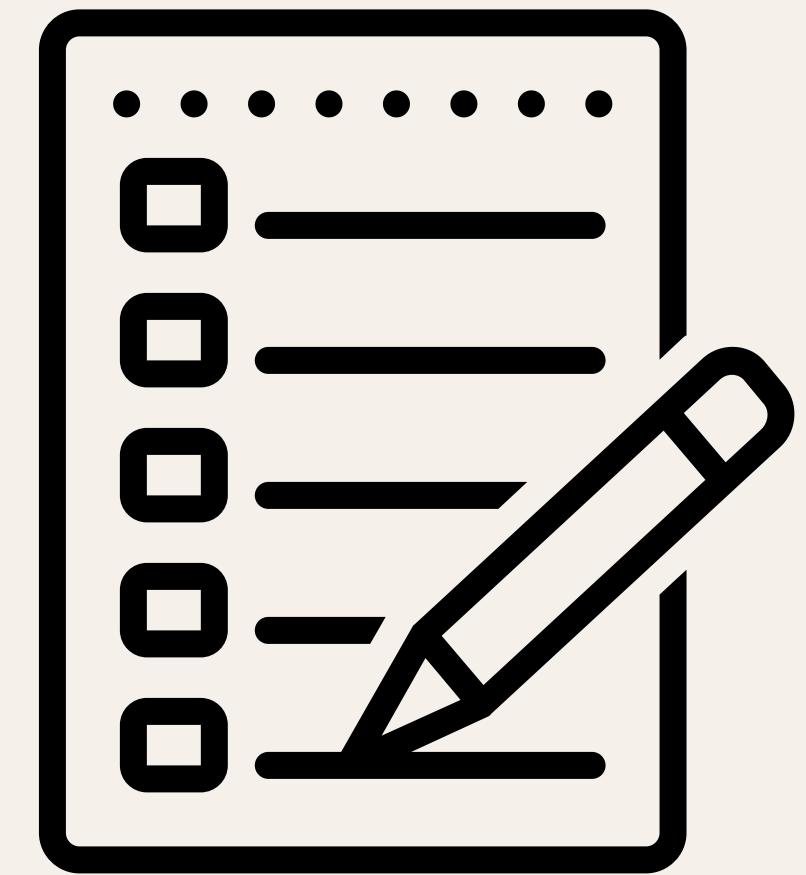


Team AI (Final Presentation)
Salih Südan, Lennart Schönwald, Piet Storm, Kevin Guminiski

Agenda

- Project Overview
- GitHub Project Board
- Video
- System Architecture
- Technologies
- Progress – Phase 1: First Interim Presentation
- Progress – Phase 2: Second Interim Presentation
- Progress – Phase 3: Final State
- Feedback and Our Implementation
- Final Remarks
- Team Contribution Overview



Project Overview

Objective:

To develop a web-based system that allows users to upload sustainability reports (PDFs) and receive structured, meaningful insights using a (LLM)

Core Features:

- Upload and analyze PDF documents
- Extract environmental data and key topics
- Chat with the content using natural language
- Generate structured JSON output



GitHub Project Board

- Screenshot of the GitHub project board with labeled columns (Backlog, In Progress, Done)
- Repository Link: [[Click Here](#)]
- Used for issue tracking, task planning, and coordination

The screenshot shows a GitHub Project Board with three columns: In Progress, Done, and Backlog. The In Progress column has 7 items, the Done column has 5 items, and the Backlog column has 12 items.

Column	Items
In Progress	7
Done	5
Backlog	12

In Progress (7 items):

- AI-based-Application #5: Frontend-Design anpassen (Status: In Progress, icon: green plus)
- AI-based-Application #7: PDF Scrollfunktion (Status: In Progress, icon: green circle)
- AI-based-Application #8: Chat Protokoll Export (Status: In Progress, icon: green circle)
- AI-based-Application #9: Key Values Export (Status: In Progress, icon: green circle)
- AI-based-Application #10: 2. PDF vergleichen (Status: In Progress, icon: green circle)
- AI-based-Application #11: Startbildschirm (Status: In Progress, icon: green circle)
- AI-based-Application #12: Slides für finale Präsi erstellen (Status: In Progress, icon: pink cross)

Done (5 items):

- AI-based-Application #1: First Version entwickeln (Status: Done, icon: purple checkmark)
- AI-based-Application #2: API ändern zu der API von der Leuphana (Status: Done, icon: purple checkmark)
- AI-based-Application #3: Kontext zum Chat hinzufügen (Status: Done, icon: purple checkmark)
- AI-based-Application #4: ... Frontend-Layout anpassen (Status: Done, icon: purple checkmark)
- AI-based-Application #6: Final presentation (Status: Done, icon: crossed-out checkmark)

Backlog (12 items):

- AI-based-Application #1: First Version entwickeln (Status: Backlog, icon: blue question mark)
- AI-based-Application #2: API ändern zu der API von der Leuphana (Status: Backlog, icon: blue question mark)
- AI-based-Application #3: Kontext zum Chat hinzufügen (Status: Backlog, icon: blue question mark)
- AI-based-Application #4: ... Frontend-Layout anpassen (Status: Backlog, icon: blue question mark)
- AI-based-Application #5: Frontend-Design anpassen (Status: Backlog, icon: blue question mark)
- AI-based-Application #6: Final presentation (Status: Backlog, icon: blue question mark)
- AI-based-Application #7: PDF Scrollfunktion (Status: Backlog, icon: blue question mark)
- AI-based-Application #8: Chat Protokoll Export (Status: Backlog, icon: blue question mark)
- AI-based-Application #9: Key Values Export (Status: Backlog, icon: blue question mark)
- AI-based-Application #10: 2. PDF vergleichen (Status: Backlog, icon: blue question mark)
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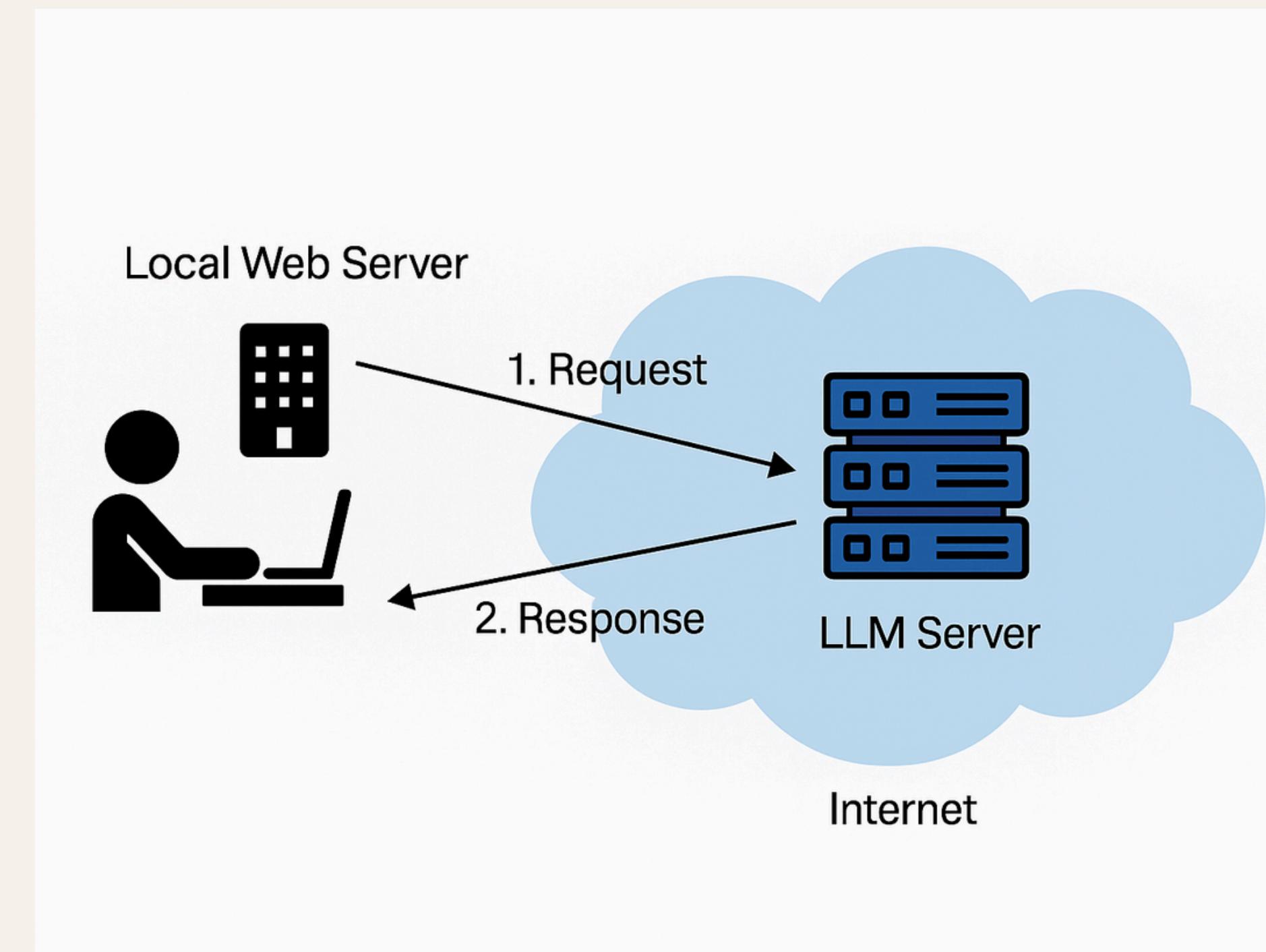


Video

- Video demonstrating:
 - PDF upload
 - Context-aware chat
 - Comparison of two PDFs
 - File download features

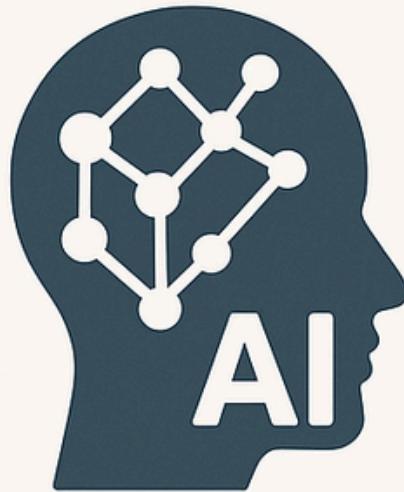
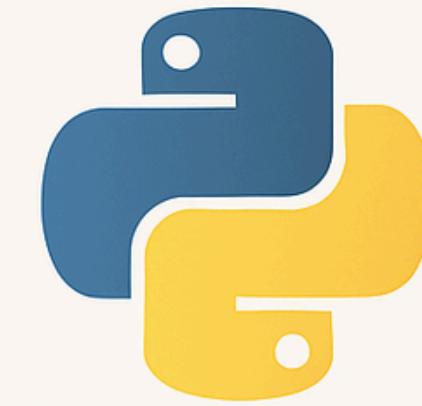
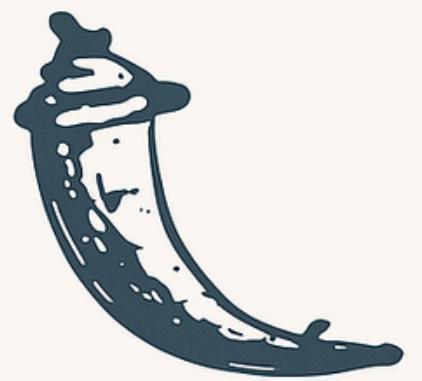
System Architecture

- **Diagram elements:**
- **Local**
 - **Frontend:** PDF upload, chat UI, PDF viewer
 - **Backend:** PDF parser, context manager, API connector
- **External:** TU Göttingen LLM API



Technologies

- **Frontend:** html, css, javascript
- **Backend:** fitz (PyMuPDF), Flask, Top-K choice, Gensim - Word2Vec
- **API:** TU Göttingen LLM



Progress – Phase 1: First Interim Presentation

Status:

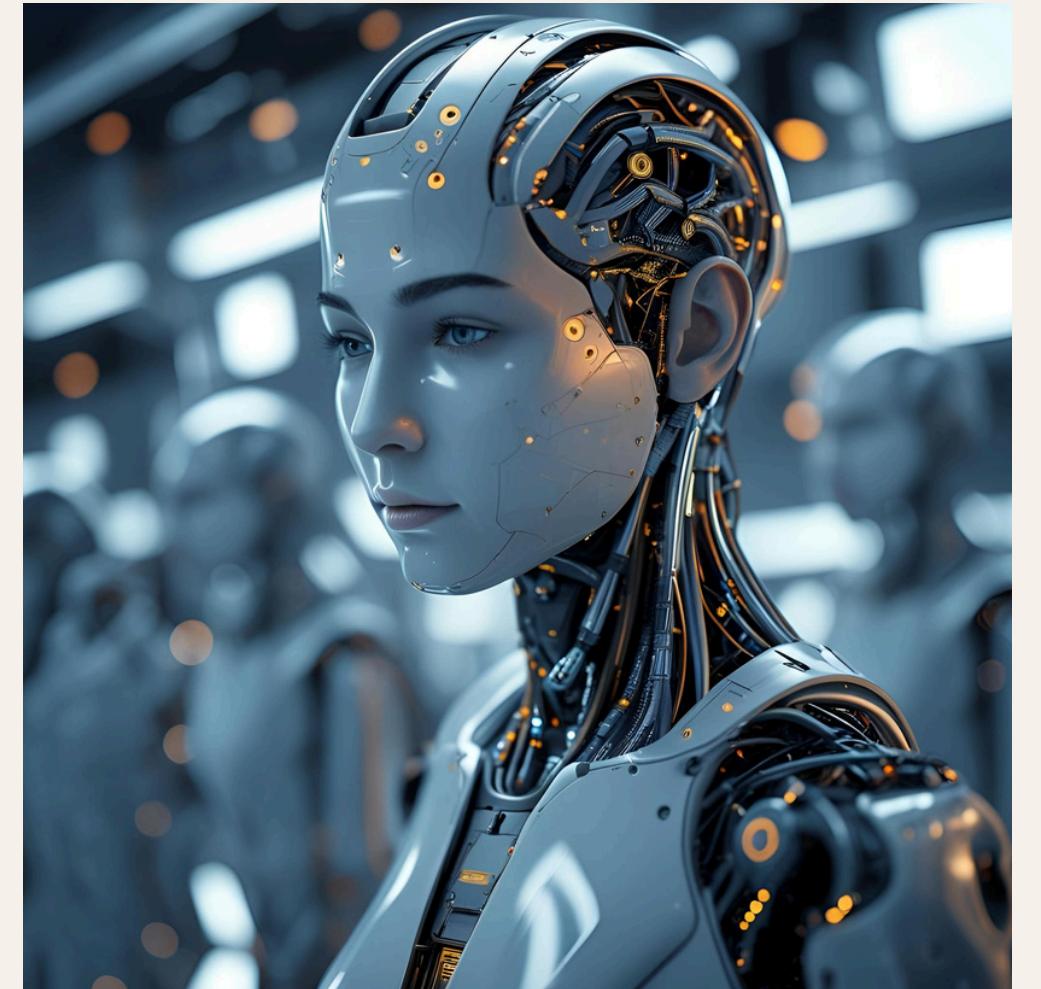
- A working prototype was developed early in the project
- PDF upload and basic chat functionality were operational
- Fast response times when asking questions through the interface

What Worked Well:

- Stable backend connection
- Initial LLM integration
- User input-response cycle was fast and responsive

Feedback:

- Context handling was missing: Follow-up questions were not understood
- OpenAI API should be replaced due to data privacy concerns
- Recommendation to apply for and integrate the API hosted by the University of Göttingen



Progress – Phase 2: Second Interim Presentation

Status:

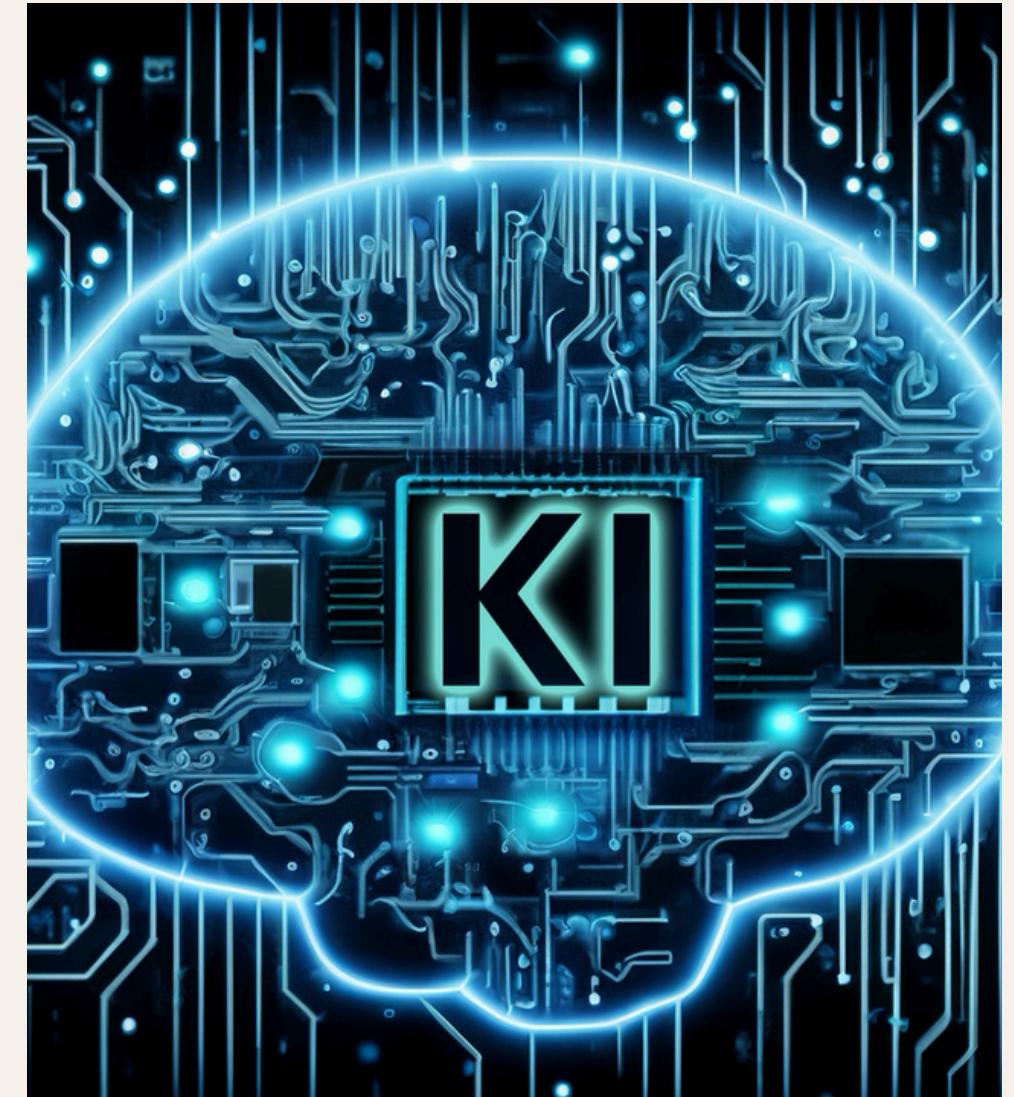
- TU Göttingen API successfully integrated
- Chat system improved to support context-based conversation
- First iteration of frontend improvements implemented

What Worked Well:

- Reliable context handling across multiple chat turns
- Fast and stable API responses
- Improved frontend layout and usability

Feedback:

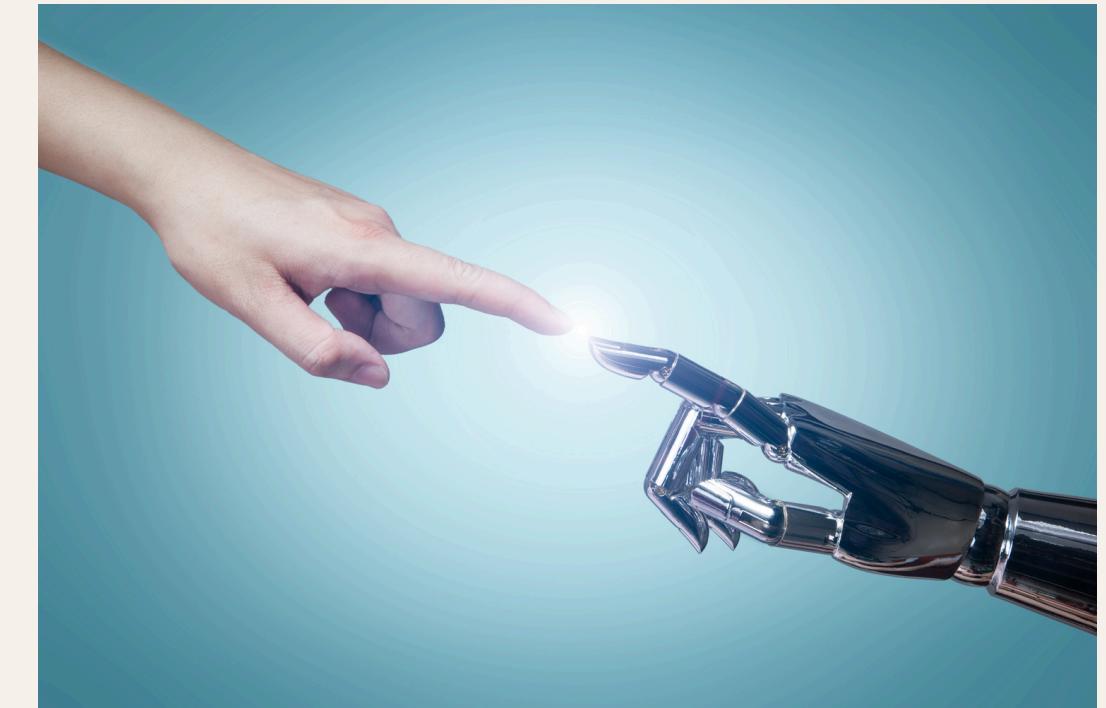
- Display the uploaded PDF in a scrollable window
- Enable the comparison of multiple documents



Progress – Phase 3: Final State

Final Achievements:

- Support for uploading and comparing two PDFs simultaneously
- Scrollable viewer embedded to navigate each document
- Major frontend improvements:
 - New Chat button
 - Downloadable chat transcript
 - Button to export key insights from the PDF



What Worked Well:

- Smooth user experience and layout
- Strong feature completion in both backend and frontend
- Addressed all major points of feedback from previous sessions

Feedback and Our Implementation

Professor Feedback Summary:

- Replace OpenAI API due to privacy concerns
- Support context-based follow-up questions
- Enable PDF display and comparison

What We Implemented:

- Integrated TU Göttingen API
- Context persistence in chat system
- Scrollable PDF viewer and multi-document comparison
- Additional UI features: download transcript, extract key data



Final Remarks

- **Developed a fully functional prototype with:**
 - Context-aware PDF chat
 - Dual-PDF comparison
 - Downloadable insights and transcripts
- Addressed all feedback points and delivered a user-friendly experience
- **Future potential:**
 - Extend to multilingual reports
 - Deeper analytical summaries
 - Broader document type support



Team Contribution Overview

	Presentation s (Slides)	Backend	Frontend	API/Integratio n	UI/UX	GitHub/Doc s
Salih	✓	✓			✓	✓
Lennart	✓	✓		✓		✓
Piet		✓		✓		✓
Kevin		✓	✓		✓	✓

The collaboration within the team worked very well, with everyone actively supporting across all areas

THANK YOU

