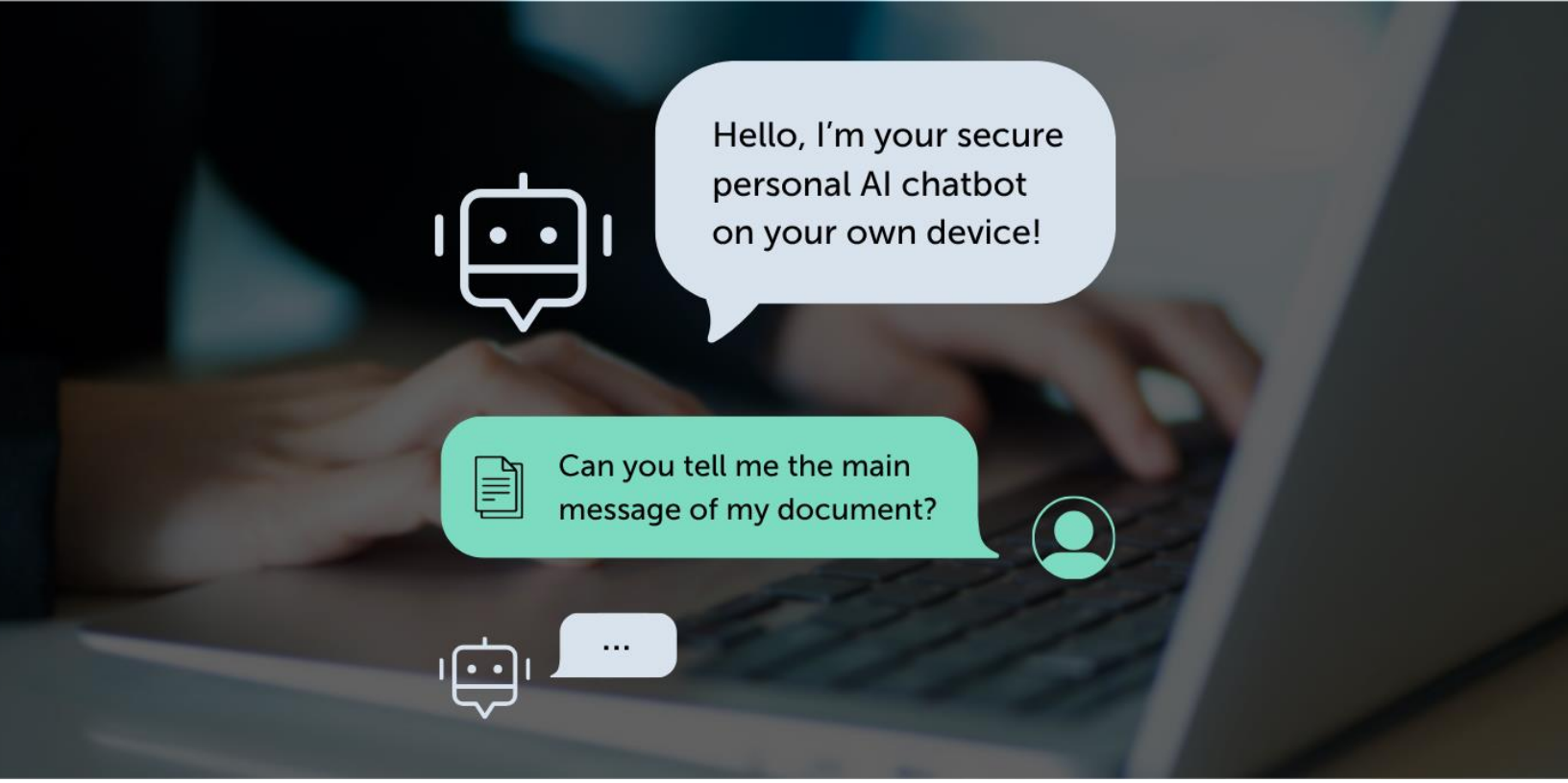



# ECDA LLM: Your own Chatbot

Keywords: RAG | Chatbot | AI | Privacy | Local Hosting | Python Package | LM Studio

ECDA LLM is an accessible chatbot tool designed to help individuals interact with documents securely and efficiently. Developed as a practical resource for professionals, researchers, students, and the wider public, it allows users to upload files and ask questions about them. Whether reviewing long reports, analysing academic papers, or organizing study notes, this tool is designed to be easily used by anyone, regardless of technical background.

The best part? **Privacy and Security**. ECDA LLM runs locally on the user's computer, which means confidential research or private documents can be uploaded safely. No third party will ever have access to the uploaded files or the questions asked. The chatbot connects to a Large Language Model (LLM) through an API. Individuals are free to enter a local or external API key, allowing them to choose the exact AI setup that best fits specific project needs and preferences.

Other features of ECDA LLM include:

- Energy Efficient Technology: ECDA LLM uses Retrieval Augmented Generation (RAG). Instead of continuously retraining the AI Model on new data (a very computationally expensive approach), RAG searches through the uploaded documents to find specific information. This makes ECDA LLM more sustainable and energy efficient compared to other AI models.
- Voice recognition: You can chat with the AI using your voice

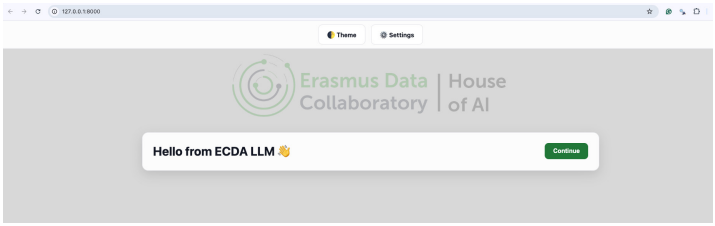
## Impact

The local chatbot has multiple advantages. The privacy and security of users makes their private information safe and protects sensitive target groups like the youth or less digitally literate adults. The use of RAG makes the tool more energy efficient and sustainable, which is crucial in the current climate crisis. Finally, the user-friendly design of ECDA LLM makes it accessible to a wide audience, democratising access to AI technology. The developers are discovering more use cases for the tool and are excited to see how the tool will be used in the future!

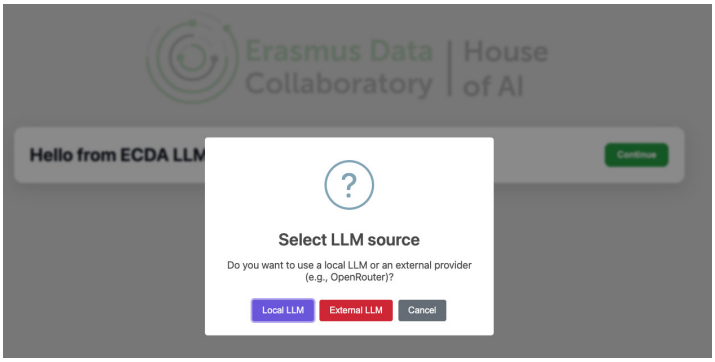
**Stakeholders:** Dr. Zaman ZiabakhshGanji (Lead Developer), EDC
**End-users:** professionals, researchers, students
**Tools/Tech used:** Python, Java Script, FastAPI, Pypi

## How to use ECDA LLM?

Note: To use ECDA LLM, you need to have Python installed on your computer. You can download it from the official website, Make sure to install Python 3.11 or higher.
**Step 1 Download:** Open the "terminal" on your PC and type **pip install ecdallm**. This is where you give a command to the operating system to allow for the download of the chatbot to your PC.
**Step 2 Install:** Once this is done, type **ecdallm** in the terminal. The computer will then automatically open your default browser and bring you to the chatbot. Repeat step 2 every time you want to use your chatbot.



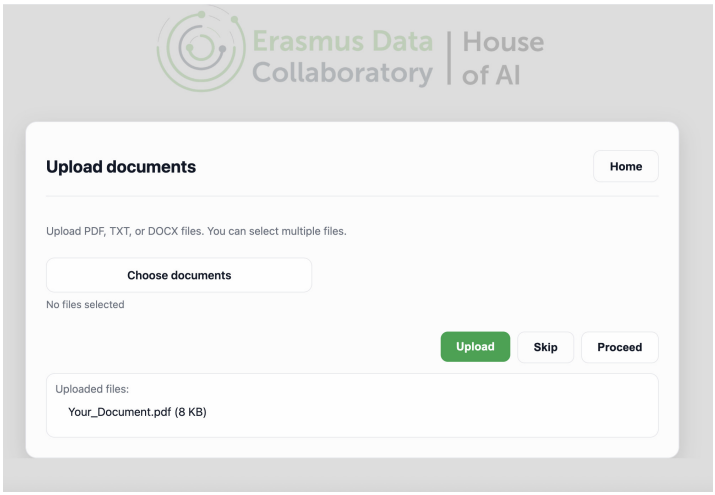

**Step 3 Set-Up:** Choose whether you want a local LLM (Option A) or an external LLM (Option B).



**Option A: Local LLM:** If you choose to run a local LLM, you will need to download LM Studio. In LM studio, download the **LLM Model** you prefer. This allows you to run a local LLM on your own computer, ensuring maximum privacy and security. Once you downloaded that, you can press "Local LLM" then "Validate". The chatbot will then connect and you can move to Step 4.

**Option B: External LLM:** If you choose "External LLM" you will need to input your own **personal API Key** (An API key is a code that allows two software programs to communicate with each other). In this case, it allows the chatbot to connect to an external LLM. You can get an API key from various providers, such as OpenAI, Gemini, Claude etc. You need to make your account on the provider's website and request an API key. Once you have your API key, input it in the chatbot and press "Validate". The chatbot will then reconnect and you can move to Step 4.

**Step 4 Upload:** Upload the documents you want to chat about.




**Step 5 Use:** Start chatting with the ECDA LLM chatbot!