From Debates to Building

- The academic world is currently stuck in circular debates about large language models instead of building tools
- Goethe University is moving past the superficial "Chat interface" and deep into the "Engine room"
- GWDG provided APIs are the key to ending the "Siloed Era" of isolated departmental software
- The goal is a hybrid model providing commercial State-of-the-Art performance today and total local sovereignty tomorrow

Sovereign, Scalable, Shared

Building the Future of Generative AI
at Goethe University Frankfurt

Pillar 1: The Infrastructure (The Engine Room)

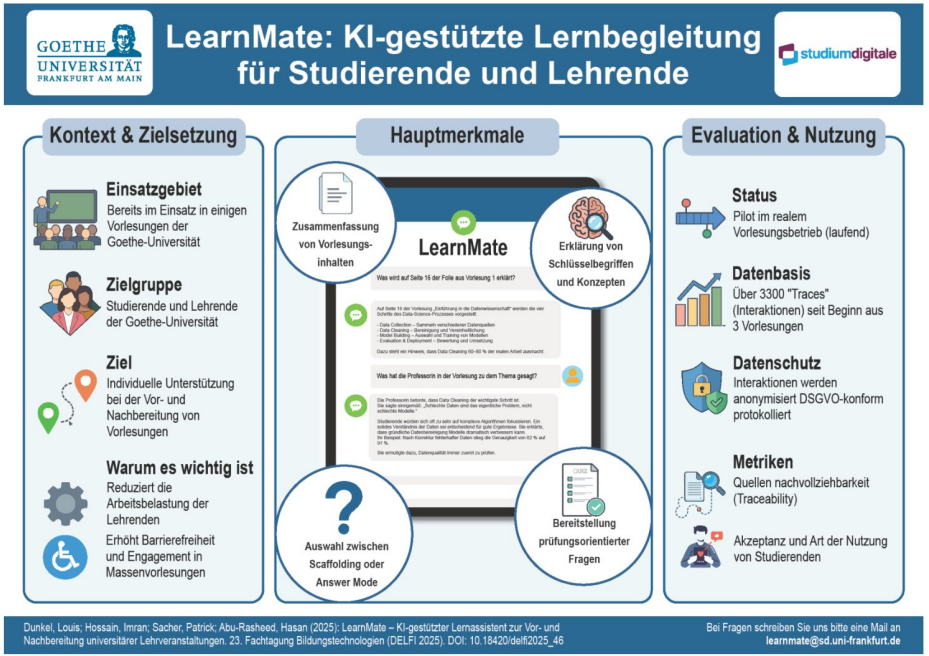
- The initiative is led by the AG Generative KI at the direction of the University Presidency
- The AI-ToolLab serves as the secure, experimental laboratory managed by studiumdigitale
- Available tools include LobeChat for text generation and Whisper-based transcription for media
- A model-agnostic LLM API currently routes to leading commercial models while integrating GWDG-hosted models

Infrastructure: Compliance & Sovereignty

- Access requires the completion of a self-learning course aligned with the EU AI Act
- System access is securely managed through valid HRZ-accounts
- Strict data sovereignty is enforced, requiring users not to enter personal or sensitive information
- The architecture allows the university to eventually pivot to total local sovereignty without rewriting any code

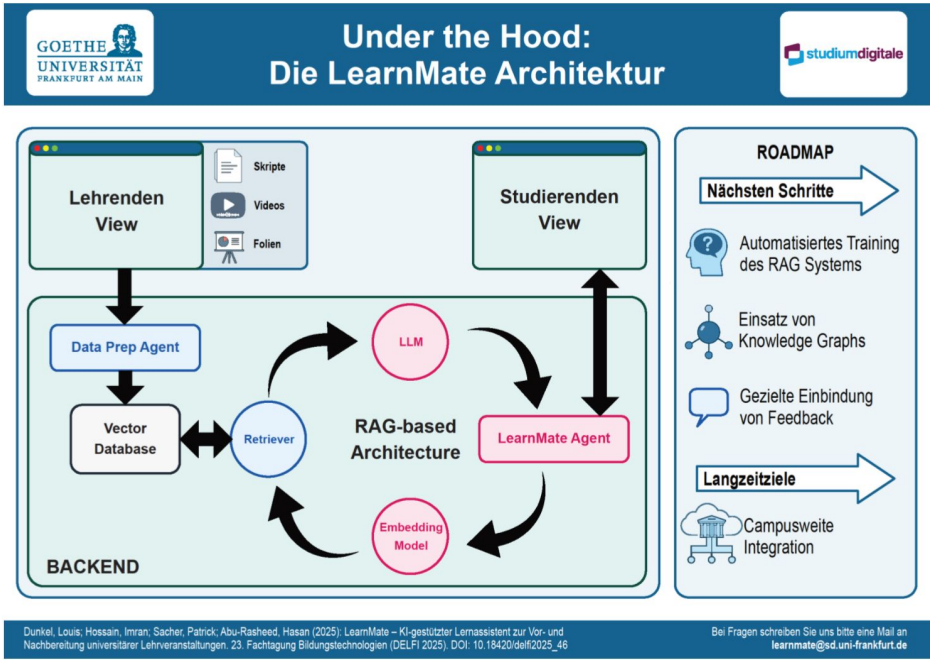
Pillar 2: LearnMate (Scaling Pedagogical Support)

- LearnMate is an AI-based Learning Assistant designed to support students and teaching staff
- The Winter Semester 2025/2026 pilot launched with 3 courses and logged over 3000 interactions, known as traces
- The program is scaling to 15 courses for the Summer Semester of 2026
- A Data Prep Agent automates the training of the RAG system by structuring lecture scripts, slides, and videos



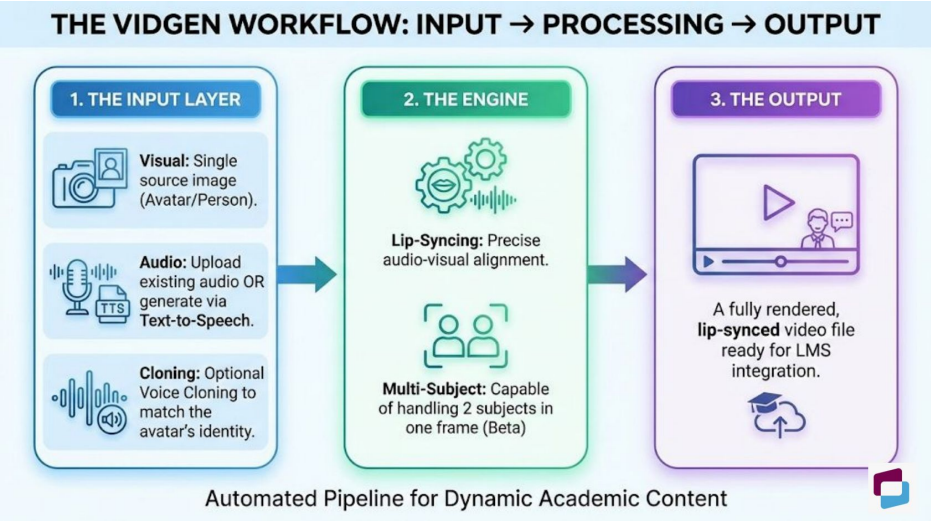
LearnMate: Under the Hood

- Data preparation utilizes ChatGPT 5 alongside GWDG fallback models like Qwen3 VL and GLM 4.7
- GWDG Whisper allows for 500MB file uploads, bypassing the labor-intensive 25MB limits of commercial providers
- The system features a Scaffolding Mode to guide students through concepts rather than just providing direct answers
- All user interactions are anonymized and tracked via Langfuse in a strictly GDPR-conform manner



Pillar 3: VidGen (Scaling Academic Presence)

- VidGen was created to solve the "Content Bottleneck" caused by extreme faculty time scarcity
- The initial prototype uses RunPod, ComfyUI, and the Infinite Talk model based on the Wan 2.1 architecture
- The system requires only one source image and one audio file to generate a lip-synced video
- Chatterbox integration allows for advanced voice cloning using a reference image, an audio snippet, and raw text



VidGen: Scaling to the Lecture Hall

- Full 45-minute lectures are processed using a "divide and conquer" method that stitches together one-minute chunks
- The team aims to move rendering from external cloud services to robust internal GWDG solutions
- GWDG Whisper is utilized to transcribe entire high-resolution course videos for the translation pipeline
- This pipeline enables the generation of multilingual scripts to give lectures a global educational reach

Pillar 4: The Community of Practice

- The community breaks down university silos using a "Digital Hallway" on the Element platform
- An Extended Core-Team drives decentralized innovation through project-based clusters
- Dedicated AI-Guides are stationed in every faculty to adapt central models into specific departmental workflows
- Knowledge and use cases are freely shared across the campus using HessenBox repositories

Conclusion: Building the Sovereign University

- Technology should empower the educator and make knowledge universally accessible, rather than replacing the human element
- Attendees are invited to contact the team to transfer these processes into their own research domains
- Attendees are encouraged to join the next AG-GKI community meeting to discuss departmental challenges
- **Together, we scale.**

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THANK YOU FOR LISTENING

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