Hochschule Karlsruhe - Technik und Wirtschaft

Fakultät für Informatik und Wirtschaftsinformatik, Fachgebiet Wirtschaftsinformatik

Studiengang: Wirtschaftsinformatik / Int. IT Business Bachelor – SS 2026

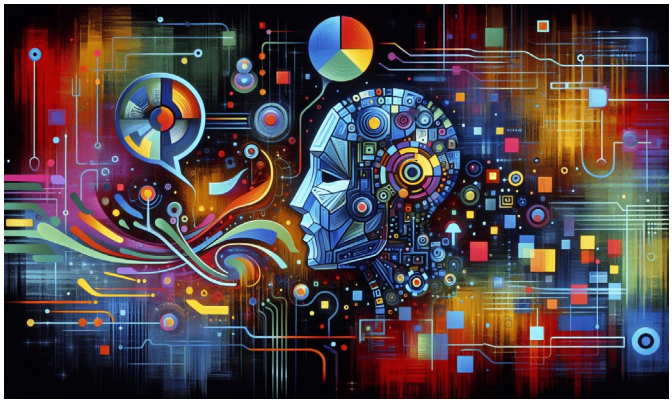
Lehrveranstaltung: Chatbots: Development & UX

Verantwortliche(r): Prof. Dr. Andreas P. Schmidt

SWS: 2

Learning Goals:

- Know about state-of-the-art chatbot development approaches using LLMs
- Understand user experience aspect in conversational approaches
- Apply user-centered design methods to create conversational solutions
- Evaluate quality and usefulness, and reflect on limits of chatbots to a conversational design approach



Content:

Conversational interaction with digital solutions has become ubiquitous since the advent of capable language models for natural language interaction. ChatGPT, Gemini, Claude as universal AI-based chat products, and chat sidebars or overlays in an ever-growing number of applications are witnesses to the hype, sometimes viewed as useful, sometimes as an awkward attempt of chasing the trend.

Conversational interfaces are not just a magic AI button. They have a more profound impact on the user experience, and it is more than just simple chat UI to craft truly useful conversational solutions. This includes:

- **Domain-specific knowledge**, implemented via Retrieval Augmented Generation (RAG), which can be naïve, graph-based, or agentic.
- **Context management,** using short and long-term memory as well as integration of data sources and tools via MCP to reach beyond the user input and text output.
- **UI concepts,** ranging from simple chats, integration of rich artefacts via canvas-based user interfaces and file-system-based approaches to on-demand generation of UIs
- **Knowledge management and AI skill development** via prompt engineering good practices or reusable skills.

The goal is to give an overview of the current approaches in chatbot development and conversational UX, and to gain profound understanding of user problems and how to solve them via conversational interfaces via projects that focus on a particular use case.

The course is suitable both for students interested in implementing chatbots and for students more interested in the user perspective. Mixed groups could be particularly beneficial for combining individual strengths.

Methods:

- Introductory lectures and workshops on technologies and UX methods
- Mentoring of (group) projects

Time:

The dates and times for the synchronous introductory part will be negotiated within the first week. The course will take place online; asynchronous participation is possible via recordings of the sessions and the possibility of scheduling individual meetings for feedback and questions.

Exam:

Presentation of insights from the project. Dates are flexible.