Jill Watson: Enhancing Teacher Presence

What is it

Jill Watson is a gen-AI-based conversational virtual teaching assistant developed by AI-ALOE and Design Intelligence Lab at the Georgia Institute of Technology.
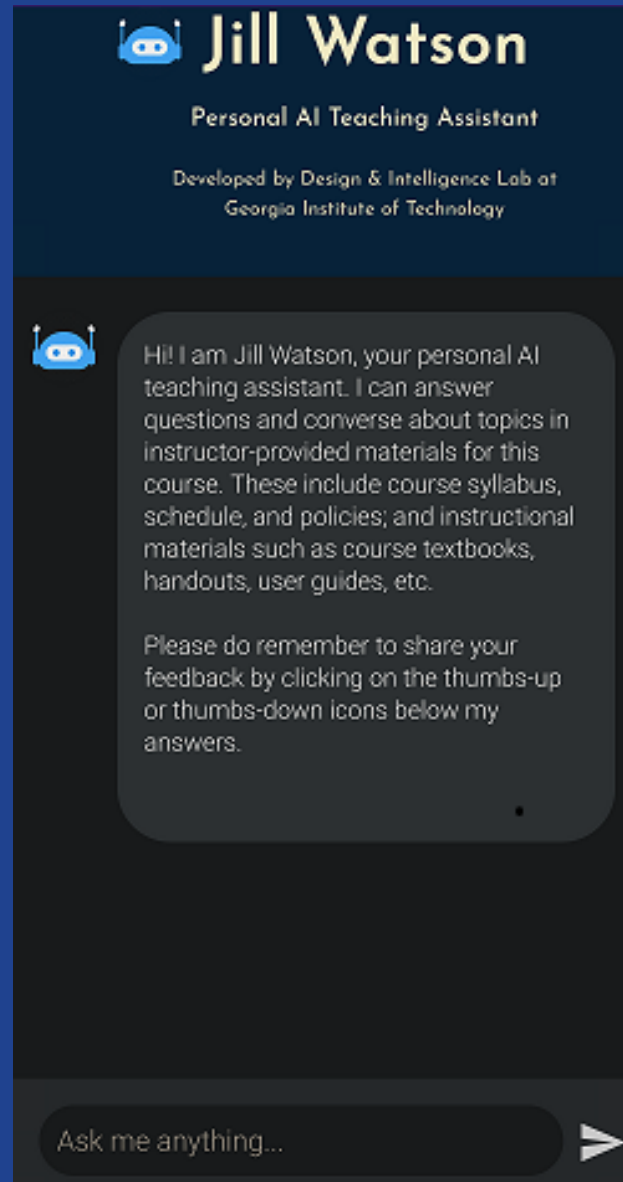
What does it do

Jill Watson enhances teaching presence by:

- Answering student questions anytime and anywhere
- Encouraging deeper cognitive engagement by students
- Decreasing time instructors spend answering routine student queries

What are its goals

- Aid learning at scale
- Increase students' self-efficacy by timely answering their queries i
- Improve learning outcomes
- Improve retention rates

Jill Watson
Personal AI Teaching Assistant

Developed by Design & Intelligence Lab at Georgia Institute of Technology

Hi! I am Jill Watson, your personal AI teaching assistant. I can answer questions and converse about topics in instructor-provided materials for this course. These include course syllabus, schedule, and policies; and instructional materials such as course textbooks, handouts, user guides, etc.

Please do remember to share your feedback by clicking on the thumbs-up or thumbs-down icons below my answers.

Ask me anything...

Jill Watson is deployed as an LTI-enabled chat box in the class LMS.

AI-ALOE   dilab

Visit our websites
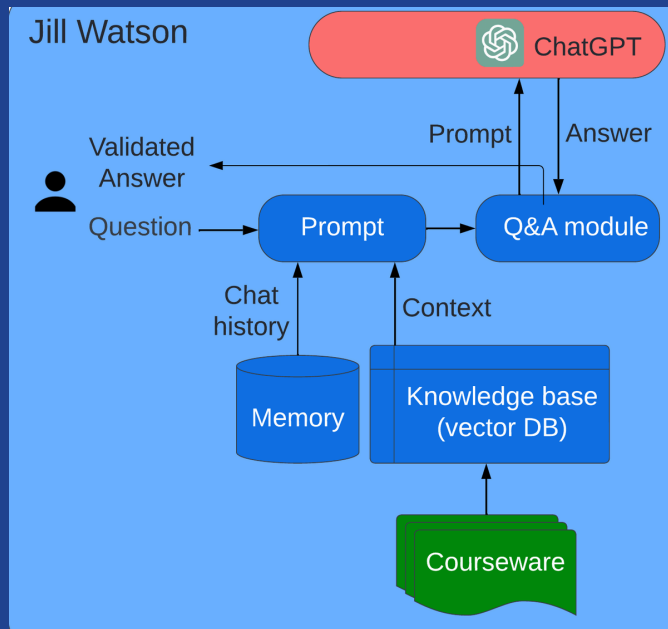https://dilab.gatech.edu
https://aialoe.org/

Contact us
sandeep.kakar@gatech.edu

Technology

- Jill Watson leverages ChatGPT along with retrieval-augmented generation (RAG) to answer queries related to instructor-approved courseware.
- A classifier rejects incoming queries unrelated to courseware.
- RAG grounds answers in courseware and mitigates LLMs' hallucinations problem.
- Additional moderation eliminates harmful speech.
- Student's past interactions are stored in a memory to enable conversationality and hence, deeper cognitive engagement.

Architecture

Deployments

- Jill Watson has been deployed in several classes across Georgia Institute of Technology and community colleges in the Technical College System of Georgia.
- Over 1500 students have had access to Jill Watson.

Selected Results from A/B experiments

- Students in the section with Jill Watson (treatment group) reported small but statistically significant increase in teaching presence on the Community of Inquiry instrument compared to the section without Jill Watson (control group).
- Treatment group had statistically significant higher course completion rate.
- Impact on grades:

Sample student feedback - "The Jill Watson upgrade is a leap forward. With persistent prompting I managed to coax it from explicit knowledge to tacit knowledge. That's a different league right there, moving beyond merely gossip (saying what it has been told) to giving a thought-through answer after analysis. I didn't take it through a comprehensive battery of tests to probe the limits of its capability, but it's definitely promising..."

Further reading

Kakar, S. et al. (2024). Jill Watson: Scaling and Deploying an AI Conversational Agent in Online Classrooms. In: Sifaleras, A., Lin, F. (eds) Generative Intelligence and Intelligent Tutoring Systems. ITS 2024. Lecture Notes in Computer Science, vol 14798. Springer, Cham. https://doi.org/10.1007/978-3-031-63028-6_7