

Human-AI Interaction: Chatbot for Reflecting on Learning Analytics

Master thesis

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Studies: Software Engineering and Management, Computer Science, Computer Science Teach Education, Computational Social Systems

Learning Analytics involves collecting data on students' learning activities and visualizing it. Typically, the goal is to give an overview to students about what they are doing, how they are doing, and what might be missing. Evidence suggests that Learning Analytics can assist students in gaining a more comprehensive understanding of their academic activities and improving their planning. The following student dashboard¹ is included in the TU Graz-wide Campus Management System, TUGRAZonline:



Figure 1: Screenshot of the student dashboard.

However, a learning dashboard per se doesn't help students systematically go from understanding the data, to interpreting the data in relation to own goals, activities and strategies, to planning what action to take. In other areas, conversational reflection guidance (a chatbot who acts like a reflection coach), has already been shown to be effective in supporting people to plan better; and further helps users learn how to reflect.

In this master thesis, the objective is to develop a chatbot with which a student can "look together" at a Learning Analytics dashboard and discuss it. The master thesis has the following elements: 1) Conversation and interaction design, 2) Technical implementation, including constraining an AI-driven large-language model (LLM) for accurate data interpretation, and the system development, and 3) Empirical evaluation through an explorative or experimental user study.

Required skills or interest in acquiring these:

- Web-Programming: JavaEE, AngularJS (including TypeScript), and relational databases
- Basics of user interface design
- Experiment design and related data analysis

Interested? Contact viktoria.pammer-schindler@tugraz.at

¹ <https://stud-dash.tugraz.at>