

Adaptive Teaching Technologies to Create and Monitor Learning Activities

Supervisors: Zacharoula Papamitsiou and Michail Giannakos

Place: LCI Lab: <https://lci.lidi.ntnu.no/>

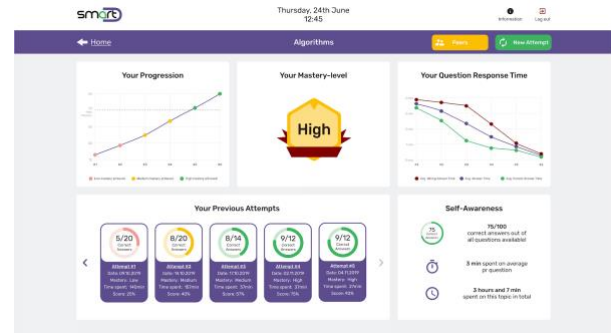
Suitable for: Two students

Introduction

The focus of the thesis is to build upon adaptive interfaces and teaching analytics and orchestration to support instructors to create learning activities and monitor students' progress in them.

Thesis Description

In a first step, the students need to review the literature and familiarize themselves with the adaptive self-assessment system (PHP, MySQL) and with adaptive tutoring systems. Then, the candidates will implement instructors' interface with teaching analytics based on the best practices found and adapted from the literature. Afterwards, the candidates will conduct a user study in order to empirically test the proposed system. Finally, the candidates will analyse the collected data and write up their thesis.



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Requirements

The ideal candidate will have a background in user experience and interface design. Solid front-end programming skills (JavaScript and CSS) and an interest in hands-on development and experimentation is also a requirement.

Programming skills: PHP, MySQL, JavaScript, CSS, Rest API.

Expected Project Work Packages

WP1: Literature study on adaptive tutoring and teaching orchestration and analytics interfaces.

WP2: Setting up the working environment and getting familiar with the code of the adaptive learning assessment system.

WP3: Implement interfaces to assist instructors to create adaptive learning activities and utilize systems features.

WP4: Conduct user studies, collect empirical data and analyze them.

WP5: Write-up the thesis.

Thesis grading scheme

Grade	Description of the evaluation criteria
A	The candidate demonstrates excellent judgement and a high degree of independent thinking. Significantly exceeded expectations with original contribution.

B	The candidate demonstrates sound judgement and a very good degree of independent thinking. A very good performance, the candidate has exceeded expectations.
C	A good performance in most areas. The candidate demonstrates a reasonable degree of judgement and independent thinking in the most important areas, the expectations are met but not surpassed.
D	A satisfactory performance, but with significant shortcomings. The candidate demonstrates a limited degree of judgement and independent thinking.
E	A performance that meets the minimum criteria, but no more. The candidate demonstrates a very limited degree of judgement and independent thinking.
F	A performance that does not meet the minimum academic criteria. The candidate demonstrates an absence of both judgement and independent thinking.