

Learning Apps Development Project

SCRP Application (2024)

Background

In the School of Computing and Information Sciences (SCIS) Software Research and Development (R&D) lab, we collaborate with computing and cross-disciplinary students and faculty to propose, design, and build software apps using a human-centered design (HCD). HCD is an approach to creating software that prioritizes the needs, preferences, and behaviors of the end-users throughout the development process.

We are currently investigating how the integration of learning theories such as inquiry-based learning (IBL), gamification (gaming theory), artificial intelligence (AI), and social media, into learning tools can enhance a learner's experience, knowledge, and engagement. We hypothesize that integrating facets of these elements will help us to cater learning tools to a wide range of learning preferences and can provide a dynamic and engaging educational experience across disciplines.

Two projects will likely be the focus of our summer work. (1) Investigate the integration of AI to help facilitate the learning process. In this research, we will abstract various levels of complexity from the end-user and measure the effect on the end-user in terms of having a seamless, intuitive, and personalized learning journey. (2) Investigate the integration of gamification and social media elements into the learning process. We will explore how game-based approaches can enhance learner motivation and how social media approaches can influence and increase tool engagement.

Application Requirements

Interested students should prepare the following materials for their application. Please reach out to Professor Lucas Cordova (lpcordova) with any questions on this application or if you have any questions about the project.

Part A: Personal Statement

Prepare a personal statement which contains the following.

1. In a short paragraph or two, tell me about yourself. This could include your major, year in school, and any experience you have with developing software.
2. In one paragraph, explain what interests you most about this project.
3. Briefly describe (one paragraph) your career interest or long-term goals post-Willamette.

4. In one paragraph, describe how you see taking part in SCRP as benefiting your personal or academic development.

Part B: Learning App User Engagement

Read through the following problem statement. Then, prepare a short response statement (one-to-two pages max) that describes how you would approach the problem using the parameters discussed below.

Problem Statement

A software development project team has recently launched an educational app designed to promote self-paced learning in various subjects, including languages, sciences, and the arts. While the app has been well-received for its comprehensive content and user-friendly interface, analytics reveal a concerning trend: many users are not progressing beyond the initial few modules, and overall daily engagement rates are declining.

The app features include interactive lessons, progress tracking, quizzes, and a community forum for learners to share insights and ask questions. The project team has collected extensive data on user interactions with these features, including time spent on the app, quiz performance, module completion rates, and user feedback through surveys and the community forum.

Response Parameters

Outline your strategy for diagnosing the root causes of declining engagement and progression within the app. Discuss the key metrics and data points you would analyze to understand how users are interacting with the app and where they might be encountering difficulties or losing interest.

Propose a series of targeted features or improvements designed to enhance user engagement and learning outcomes. You may wish to discuss how integrating elements of the proposed research areas (learning theory, gaming theory, AI, social media) may or may not enhance the learning experience. You may provide examples from your own personal learning journey and experiences with learning tools to help support your arguments. You are also encouraged to provide support from the recent literature (last 1-5 years) that supports your proposal.

Lastly, outline a plan for evaluating the impact of these improvements on user engagement metrics, including specific indicators of success and methods for ongoing monitoring and feedback collection.