Using the Accessible Learning Labs for Accessibility and Machine Learning Education[*]

Conference Tutorial

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1 Abstract

Our *Accessible Learning Labs* (ALL) project informs participants about how to properly create accessible software and teaches participants about fundamental concepts of Artificial Intelligence and Machine Learning (AI/ML). To enhance readability, we will be using the abbreviation AI/ML to reference these concepts. These interactive learning modules demonstrate the need to create accessible software and provide hands-on experiences that showcase the multifaceted nature of AI's impact. This tutorial will benefit a wide-range of participants in the software engineering community, from students to experienced practitioners who want to further understand the implications of AI/ML in various domains and ensure that they are creating inclusive, accessible software. Complete project material is publicly available on the project website: `https://all.rit.edu`

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2 Introduction

To fill the existing void in accessibility education, we have created *a comprehensive collection of laboratory activities that are essential to accessibility education.* Furthermore, in an aim to further AI/ML education, multiple educational labs have been created to understand the wider significance of AI/ML across different fields.

The labs are easy to integrate into a variety of existing introductory computing courses (*e.g.* Computer Science I & II) due to their easy to adopt, self-contained nature.

The labs and their experiential format have demonstrated the effectiveness in previous works [2, 3, 5, 1, 4].

2.1 Lab Structure

Each lab addresses at least one accessibility issue or AI/ML concept and contains: I) Relevant background information on the examined topic, II) An example app containing the accessibility problem or AI/ML topic , III) A process to emulate the problem (as closely as possible), IV) Testimonials from people on their real-life experiences with using non-accessible software or extra information regarding the AI/ML concept, and V) A quiz where the participant is tested on their acquired knowledge on the topic.

3 Tutorial Session Agenda

Activity 1: Ethics of AI-focused Lab: (30 minutes) This lab introduces participants on the ethics behind the implementation of Artificial Intelligence models. This lab guides users through multiple scenarios where the AI is biased.

Activity 2: Literacy-focused Lab: (30 minutes) This lab instructs participants on proper procedures in making software accessible to users with different literacy levels. Participants learn about the importance of creating comprehensive and readable web pages through the Fog Index formula.

Activity 3: Lab Feedback: (15 minutes) Participants will provide feedback on the material, and offer guidance to presenters on the future direction of the labs. This feedback will be incorporated into the design of future labs.

References

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