

OER Revisions and Ancillary Materials Creation Mini-Grant Application

Affordable Learning Georgia aims to support the sustainability of previous Textbook Transformation Grants implementations through revisions of created open educational resources or the creation of new ancillary materials for existing OER. Mini-grant participants do not need to be the original creators of the resource(s). While we welcome original authors to revise their original materials, the nature of open licenses allows for the revision and remixing of OER materials by anyone as long as the terms of the license are adhered to.

The final deliverable for this category is the revised or newly-created materials as proposed in the application, which will be hosted through GALILEO Open Learning Materials. All revised or newly-created materials will be made available to the public under a Creative Commons Attribution License (CC-BY), unless the original materials were under a more restrictive license such as the inclusion of SA (Share-Alike) or NC (Non-Commercial).

For the purposes of this grant, we define revision as the major improvement of a resource through updates for accuracy, accessibility, clarity, design, and formatting. We define ancillary materials as any materials created to substantially support the instruction of a course using an existing open educational resource(s).

While mini-grants do not normally require the Letter of Support process that larger Textbook Transformation Grants require, multi-institution collaborations on a mini-grant project do require a Letter of Support from each institution. This is to ensure that not only the Project Lead's institution is aware of the grant.

Applicant Name *

Selena He

Applicant Position *

Associate Professor

Applicant Institution *

Kennesaw State University

Applicant Email Address *

Please use your institutional email address.

she4@kennesaw.edu

Other Team Members

Please provide both names and email addresses here.

Type of Project *

- Revision of pre-existing OER
- Creation of ancillaries for pre-existing OER
- Other: _____

Course Number(s)

CS4322

Course Title(s)

Mobile Software Development

Final Semester of the Project *

This is the semester in which the materials created/revised will be completed.

Spring 2021

Summer 2021

Proposed Grant Funding Amount: *

This is the total (in a dollar amount) of funding you are requesting for the mini-grant. There is a maximum of \$4800, with a maximum of \$2000 per team member and \$800 for project expenses.

\$2800

Currently-Existing Resource(s) to be Revised / Ancillaries Created *

Please provide a title and web address (URL) to each of the currently-existing resources that you are either revising or creating new ancillary materials for below.

<http://ksuweb.kennesaw.edu/~she4/2020Spring/cs4322/lectures.php>

Project Description *

In at least one paragraph, describe your project's goals and deliverables.

Mobile software development (CS4322) has been integrated into Kennesaw State University's (KSU) BSCS curriculum for years. In the course, basic Android application development components are introduced. However, developers are increasingly relying on Machine Learning (ML) to enhance their app's user experience. Moreover, using smartphone camera as a visual device to interact with the real world has becoming ever popular with utilization of deep learning and augmented reality as a tool. Hence, it is a good time to modify the existing course contents and to integrate the latest Artificial Intelligence (AI) technologies, such as TensorFlow Lite (the Tensorflow implementation for smartphone devices), and Firebase ML kit (a Machine Learning SDK available on Google Firebase). On the other hand, to have more funny side of technology, we can start playing around with Augmented Reality (AR) with ARCore and Android Camera X.

The main goal of this mini-grant project is to introduce the latest data analytics, AI and AR tools for Android application development and develop hands-on use cases for CS 4322, which is being offered by the PI in the Department of Computer Science at KSU. This course has already been designed as a textbook-free course with hands-on experiences by developing real-world applications supported by ALG round 14 grant. The proposed mini-grant project specifically is to develop open source materials that include practical labware, work through tutorials, and projects with the use cases that includes AI and AR models.

The current version of course include materials developed in 2018 has not seen any major revisions since (this area is a fast-paced emerging area). The new materials will cover an update of machine learning contents and course structure, and will support the current learning outcomes for the course by providing more thorough and detailed lab activities that more closely align with lecture contents. Practical lab/tutorial activities will be redesigned to facilitate entrepreneurial and critical thinking about the ways in which current trends in AI/AR-based mobile application development and new industries such as FinTech-related application development. The produced materials will be delivered to faculty and students using D2L and will be made available publicly through GitHub and other open source channels.

Timeline and Personnel *

Provide a project timeline with milestones below, keeping in mind your selected Final Semester above. Provide a short description of the roles any additional team members will take on during the activities in your timeline.

Milestone 1 – develop new programming assignments/labs/tutorials, and test their feasibility according to the learning outcomes of CS4322.

Milestone date: the end of Fall 2020.

Person responsible for the milestone: Selena He.

Milestone 2 – design new team developmental projects with specific use cases in various industries including FinTech, Healthcare, and banking to name a few.

Milestone date: the end of Fall 2020.

Person responsible for the milestone: Selena He.

Milestone 3 – adopt the new material in the course offered in Spring 2021, collect data of student feedbacks.

Milestone date: the end of Spring 2021.

Person responsible for the milestone: Selena He

Milestone 4 – incorporate the new materials for continuous delivery and improvement.

Milestone date: the end of Summer 2021.

Person responsible for the milestone: Selena He.

Budget *

Please enter your project's budget below. Include personnel and projected expenses. The maximum amounts for the award are as follows: \$4,800 maximum award, \$2,000 maximum per team member, \$800 maximum for overall project expenses. Unlike standard-scale and large-scale transformations, the maximum of \$800 is not a required element of the budget, but rather meant primarily for the purchase of specific tools and software which would help with improving resources.

Course developer (Dr. Selena He) - \$2,000

Travel/Equipment (purchasing credits in Google Cloud Server, Google Firebase ML Kit, Google TensorFlow Lite, and/or Google ARcore) - \$800.

Total \$2,800

Creative Commons Terms *

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