UNIVERSITY OF LOUISIANA AT LAFAYETTE

STEP Committee

Technology Fee Application

Equipment for the Video Game Design and Development (VGDD) Lab
Title

Dr. Arun K. Kulshreshth
Name of Submitters

Computer Science, School of Computing and informatics
Organization

Title: Equipment for the Video Game Design and   **Date:** 07/16/2018
            Development (VGDD) Lab
Name (Contact Person):   Dr. Arun K. Kulshreshth
Address: 301 E. Lewis Street,
            James R. Oliver Hall, Room 226,
            Lafayette, LA 70503
Phone Number: (337) 482-6638   **Email:** arunkul@louisiana.edu
Department/College/Org: Computer Science,
                           School of Computing and Informatics,
                           College of Sciences,
                           University of Louisiana at Lafayette

ABSTRACT:

Video game design and development is a prominent area and a very popular concentration choice for the computer science undergraduate students. Due to recent advancements in graphics and virtual reality technology, there are so many job opportunities available for the students in this area. The Video Game Design and Development (VGDD) laboratory is the main laboratory used by our students in the video game design concentration. However, our school of Computing and Informatics has outdated equipment in this laboratory which negatively effects related classes in this area. This laboratory is utilized every semester by students who take video game design courses, computer graphics course, students/researchers who need high performance machines for their projects/research work. This lab is used by not only computer science and CACS (Center for Advanced Computer Studies) students but also students from other disciplines such as visual arts, engineering, math and physics. We are in the process of upgrading the equipment in this laboratory to support students in these areas. This request is for funding to enable the acquisition of equipment to enhance this lab, specifically replacement of outdated computers. This laboratory is utilized by both undergraduate and graduate students. If funded, these enhancements will allow students to develop both knowledge and experience, making them more competitive in the job market, and will help us to continue attracting more students in our program.

Proposal Description

A) Purpose of grant and impact to student body as a whole

Becoming a computer scientist and working software developer requires computer science majors to work toward developing their knowledge, skills and experience. The purpose of this grant is to assist these students in their development by enhancing the Video Game Design and Development (VGDD) laboratories in the School of Computing and Informatics. Several of the computers in this lab are outdated (8-10 years old) and are approaching the end of their life. A few of these computers have already stopped working due to failure of their parts. Thus, we are proposing to get replacement computers for this lab. These computers are used by students for several courses including video game design, graphics, etc. Having outdated equipment in this lab negatively affect their projects since the latest game design tools don't work effectively on these old machines. The department has about 225 students using this VGDD lab and this number is growing every year due to popularity of this concentration. In addition, this lab also serves as a major recruiting hub on preview days for high school students. Furthermore, this lab is also utilized during the annual Science Olympiad for the Game-On event which is a game design competition for the high school students.

The equipment that will be purchased through the STEP funding will support and boost undergraduate and graduate work in the area of video game design and will be utilized for interdisciplinary collaborations with other departments and schools within UL Lafayette.

Impact to the student body

Based on the provided justification, we expect the following impacts on the student body:

- Improving computer science student's abilities and expertise in the area of video game design, and computer graphics.

- Enhancing student skills by avoiding time to deal with slow outdated computers. Some students complain that their laptop is more powerful than these old computers.

- Enabling the Computer Science program to enrich current concentrations (e.g. video game) by allowing new possible projects (utilizing this new equipment) for students. This will attract more students to the Computer Science and will increase the number of enrollments in the program.

- Enabling students in other departments and schools, such as department of engineering, math and physics to gain access to computing resources.

B) Projected lifetime of enhancement

We believe that the computers purchased can work perfectly for at least 5 years. After that period, we can possibly upgrade the components in the computer and make it usable for another 3-5 years (total 8 to 10 years).

C) Person(s) responsible for

    a. Implementation

    Implementation will be carried out with the help of the Computer Science program system administrator (Mr. Frank Ducrest), Dr. Arun K. Kulshreshth, and their undergraduate and graduate students.

    b. Installation

    Installation will be carried out with the help of the Computer Science program system administrator (Mr. Frank Ducrest), Dr. Arun K. Kulshreshth, and their undergraduate and graduate students.

    c. Maintenance

    Maintenance will be carried out with the help of the Computer Science program system administrator (Mr. Frank Ducrest), Dr. Arun K. Kulshreshth, and their undergraduate and graduate students.

    d. Operation

    Operation will be carried out with the help of the Computer Science program system administrator (Mr. Frank Ducrest), Dr. Arun K. Kulshreshth, and their research lab students which includes both undergraduate as well as graduate students.

    e. Training (with qualifications)

    Dr. Arun K. Kulshreshth, and their research team members that will include undergraduate and graduate students. Also, a general training document will be prepared to teach others on how to access and work with the system.

D) Grant proposal and justification

    Our intention in requesting funding to purchase 12 computers is to equip VGDD laboratory with latest technology by replacing outdated hardware. This equipment would be utilized by undergraduate and graduate students, both as part of projects and in working with researchers in the School of Computing and Informatics to gain experience with applications in several broad areas including human-computer interaction, virtual reality and computer graphics. If funded, this grant request will allow students in the School of Computing and Informatics to gain valuable experience directly related to success after graduation.

Budget Proposal

1.   **Equipment**   **$24,000**

          12 powerful computers with high end CPU and Graphics   Total: $24,000.00

2.   **Software**   **$0.00**

3.   **Supplies**   **$0.00**

4.   **Maintenance**   **$0.00**

5.   **Personnel**   **$0.00**

6.   **Other**   **$0.00**

TOTAL: **$24,000**

Previously funded STEP projects:

$9,500 STEP Grant (Spring 2018 Cycle) **Dr. Arun Kulshreshth** and Dr. Ashok Kumar. Equipment for the Video Game Design and Development (VGDD) Lab. Two projectors, one computer and several wireless game controllers will be purchased (under process) with support from this STEP grant.