Summer 2019

Game or Simulation Implementation

Brian Grey
Harrisburg University of Science and Technology, bgrey@harrisburgu.edu

HARRISBURG UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Computer and Information Science
Undergraduate Project Topics and Ideas

Mina Gabriel,
CISC Experiential Learning Coordinator
Harrisburg University
326 Market St,
Harrisburg, PA 17101
(717) 265-3727
MGabriel@HarrisburgU.edu
http://harrisburgu.edu/

Title:
Game or Simulation Implementation

Author:
Brian Grey -bgrey@harrisburgu.edu

Difficulty:
Moderate

Specialization:
Programming

If other, please specify:

Most Appropriate Course:
Project II

Brief Description:
Student will design/will have previously designed a video game or simulation, including any necessary modeling and mechanics. They will then implement the game using their preferred language (although Unity or Python will be strongly recommended). While this project is written with a traditional video game in mind, students may also consider implementing a serious game (a game that attempts to teach something) or a simulation under very similar guidelines.

This specific project can be done in association with a professor from IMED and it may be recommended that the student undertake a Project I designing the game specifically with an IMED design expert.

This project COULD be undertaken individually or as a group.

Number of students needed:
1

Outcomes and Deliverable:
A working code base implementing an early, functional iteration of a video game

Skills Required:
Software development skills at an intermediate level in any language (preferably Unity or Python)
Experience with game or simulation design principles

Available Resources:

Program Goal:
CISC 1.3: Develop Solution, CISC 1.4: Deploy Solution CISC 2.2: Software Platform CISC 4.1: Written Communication, CISC 4.2: Oral Communications

Student Learning Outcomes:
1a: The student should be able to analyze a problem in a manner that facilitates the design of its solution., 1b: The student should be able to apply relevant principles of computing during their analysis of a problem., 1c: The student should be able to apply relevant principles of related, non-computing disciplines during their analysis of a problem., 2b.:Student is able to develop a software solution from a formal design specification., 2c: Student is able to evaluate a software solution to determine its compliance with the specification., 3a: Student will be able write in a standardized format in order to organize their thoughts and deconstruct their ideas at a level appropriate for the desired audience., 3b: Student will be able to verbally communicate effectively with an advisor, group of colleagues or an audience to express a thought or idea at a level appropriate for the desired audience., 6a: Student will be able to produce computer-based solutions by applying applicable computer science theory and software development fundamentals