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Project Topics and Ideas

Computer and Information Sciences,
Undergraduate (CISC)

Summer 2019

Performance Optimization of Big Data Transfer in High-performance Networks: A Reinforcement Learning Approach

Daqing Yun

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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:

Performance Optimization of Big Data Transfer in High-performance Networks: A Reinforcement Learning Approach

Author:

Daqing Yun - dyun@harrisburgu.edu

Difficulty:

Moderate

Specialization:

Computer and Network Security

If other, please specify:

Most Appropriate Course:

Project II

Brief Description:

Choosing optimal parameter values for big data transfer in HPNs

Number of students needed:

1

Outcomes and Deliverable:

Source code; research paper

Skills Required:

Understanding of machine learning algorithms or willing to learn about them; programming skills in Python and Skikit-learn libraries

Available Resources:

Domain knowledge; code base; testbed

Program Goal:

CISC 1.1: Mathematical Analysis, CISC 1.2: Sound Reasoning, CISC 1.3: Develop Solution CISC 2.2: Software Platform, CISC 2.3: Networking, CISC 2.4 Data Structure, CISC 2.5 Analysis of Algorithms CISC 3.1: Explore New Methodologies 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., 2b.:Student is able to develop a software solution from a formal design specification.