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Summer 2019

Machine Learning in High-performance Networking

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Computer and Information Science Undergraduate Project Topics and Ideas

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Title:

Machine Learning in High-performance Networking (Tentative)

Author:

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Difficulty:

Moderate

Specialization:

Information Management and Data Analytics

If other, please specify:

Most Appropriate Course:

Project II

Brief Description:

Apply machine learning methods to improve high-performance networking

Number of students needed:

1

Outcomes and Deliverable:

Source code + publishable project report

Skills Required:

Programming skills in such as Python, Go, etc. Understanding of ML algorithms, libraries, and frameworks.

Available Resources:

Preliminary promising results; Available datasets; Source code base; Collaboration with scientists in other institutions.

Program Goal:

CISC 1.1: Mathematical Analysis, CISC 1.2: Sound Reasoning, CISC 1.3: Develop Solution, CISC 1.4: Deploy Solution CISC 2.1: Hardware Platform, CISC 2.3: Networking 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., 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.