

2019

Bandwidth Scheduling in High-performance Networks (Tentative)

Daqing Yun



Computer and Information Science Undergraduate Project Topics and Ideas

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Title:

Bandwidth Scheduling in High-performance Networks (Tentative)

Author:

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Difficulty:

Hard

Specialization:

Computer and Network Security

If other, please specify:

Most Appropriate Course:

Project II

Brief Description:

Formulate bandwidth scheduling problems with various objects; prove complexities of these problems; design and evaluate proposed heuristics using simulations

Number of students needed:

1

Outcomes and Deliverable:

Simulation code + project report

Skills Required:

Good programming skills; good understanding of algorithms design and problem solving; knowledge about computational complexity

Available Resources:

Simulation code base; background knowledge introduction in related areas; testbed

Program Goal: CISC 1.1: Mathematical Analysis, CISC 1.2: Sound Reasoning, CISC 1.3: Develop Solution CISC 2.2: Software Platform, CISC 2.4 Data Structure, CISC 2.5 Analysis of Algorithms CISC 3.2: Explore New Design 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., 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., 6a: Student will be able to produce computer-based solutions by applying applicable computer science theory and software development fundamentals