University of Nebraska at Omaha

DigitalCommons@UNO

2-28-2022

The 10th Annual Computer Science Workshop, Submissions, Abstract Template

Computer Science Department
University of Nebraska at Omaha

Recommended Citation

Title of the Abstract

First-name Last-name, Graduate Student, Computer Science
Faculty Mentor: First-name Last-name

The abstract should use 1.5 single line spacing. The font should be 12-point Times New Roman. The title of the abstract should be bold-faced with 14-point Times New Roman. The abstract should be fully justified (left and right). The abstract should not exceed one page. The abstract should be uploaded (saved) as a PDF.

Sample:

Simulator for Qubit Measurement Using Augmented Reality

Sai Pradeep Koneti, Graduate Student, Computer Science
Faculty Mentors: Mahadevan Subramaniam, Abhishek Parakh

This research proposes a new way of visualizing the phenomenon of measurement of a qubit (quantum bit) using tools of augmented reality. The main focus is on concept of polarization, basis and measurement outcomes with respect to different bases. These form the fundamentals for quantum computing and cryptography. The augmented reality application will provide a simulator for the measurement of the qubit based on the input angles of bases and polarization. The users can give different values of bases and polarization and can observe the variation in qubit values with respect to those bases. Various simple props will be used that a student can hold in their hands, but their interactions with them will be enhanced using augmented reality. Future developments will include topics like superposition and entanglement. Our hypothesis is that given the lack of quantum equipment, augmented reality will provide a means for intuitive understanding of complex counter-intuitive phenomenon. Research has shown that hands-on exercises increase comprehension and retention of theoretical concepts.