CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

VIRTUAL COLLOQUIUM

Friday, April 23
3:00 – 4:00 PM
https://ccsu.webex.com/meet/gotchev

A STUDY OF SUPERPERMUTATIONS

KYLE COURTEMANCHE

CENTRAL CONNECTICUT STATE UNIVERSITY

Abstract: A superpermutation is a string created from a set of n symbols in which every possible permutation of those symbols is contained at least once as a substring. By adjusting the order in which the permutations appear, it is possible to generate superpermutations of different lengths. A shortest length superpermutation is one in which the fewest number of wasted characters are present and is also referred to as a minimal superpermutation. We will consider two techniques used to generate minimal superpermutations for various n values and will perform an algorithmic analysis on each to consider the time and space complexity involved. The first technique is recursive and known to generate minimal superpermutations of $n \leq 5$. The other technique treats superpermutations as paths through a directed graph, which produces the shortest known superpermutations of $n \geq 8$.

For further information:
gotchevi@ccsu.edu 860-832-2839
http://www.math.ccsu.edu/gotchev/colloquium/