KLINGLER
College of Arts & Sciences
MARQUETTE UNIVERSITY

Department of Mathematics, Statistics and Computer Science

SPECIAL COLLOQUIUM ANNOUNCEMENT

Sorting Permutations with C-Machines

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1:00 p.m., Monday, February 12, 2018

Abstract

In his seminal work, The Art of Computer Programming, Donald Knuth asks the reader to prove that the permutations that can be sorted by a stack are exactly those that avoid the pattern 231. This is one of the earliest questions from a field now known as Permutation Patterns that has been steadily growing and developing in the decades since.

In this talk, we'll return to and generalize this genesis question by introducing a sorting device called a C-machine which generalizes stacks and queues from computer science. After introducing the field of Permutation Patterns, I'll show how the framework of C-machines unlocks a structural description that helps us answer many intriguing questions.

For several cases where we can't find exact answers, I'll describe two computational and experimental methods that are guiding the way toward solutions: automated conjecturing of generating functions, and differential approximation of asymptotic behavior.

1313 W. Wisconsin Avenue, Cudahy Hall, Room 401, Milwaukee, WI 53201-1881

For further information http://www.mscs.mu.edu/mscs/resources/colloquium.html or contact Dr. Daniel Rowe at #414-288-5228, daniel.rowe@marquette.edu

POST-COLLOQUIUM REFRESHMENTS SERVED IN ROOM 342 AFTER 2:00 P.M.