

Discrete Mathematics Seminar

Time: Friday, 26 March 2010, 12:30-1:30 PM

Room: 238 Derrick Hall

Title: The Encoding of Natural Numbers as Nested Parentheses Strings

Speaker: Dr. Robert Ogden, Computer Science Department (retired)

Abstract:

We provide an efficient encoding of the natural numbers $\{0, 1, 2, 3, \dots\}$ as strings of nested parentheses $\{(), (()), (()), ((())), \dots\}$, or considered inversely, an efficient enumeration of such strings. The technique is based on the recursive definition of the Catalan numbers. Applications of this encoding to prefix-free data encoding and recursive function theory are briefly considered.