



IEEE Hamilton Section



An Approach to Computational Thinking

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Date: Wednesday 2013-Feb-13

Time: 6:45 p.m.-9:00 p.m.

Location: Meeting Room 1A, McMaster Innovation Park,
175 Longwood Road, Hamilton, ON L8P 0A1

Directions: <http://mcmasterinnovationpark.ca/directions-to-the-mip>

Free parking. Free refreshments.

Abstract:

Engineers and scientists still dedicate too much effort trying to solve the computational problems they find in their professional endeavours. Problem solving tools exist and are quite powerful. However, their use requires a sound background in problem solving. This limits their potential use. That is why some authorities have stated that computational thinking should be focused towards problem solving.

This talk exposes some of the challenges faced by computational problem posing and solving in engineering and science. It also describes a rational approach to the computational thinking needed to tackle these problems.

The proposed approach relies upon the application of dichromatic graphs to represent and develop the problem and the algorithm that solves the former. Thanks to this visually oriented approximation, abstract concepts and processes become clear, making the method both rigorous and intuitive. A real-life example is shown to illustrate some of the theoretical ideas involved in the method.

The presented method has proven itself useful for engineering education and practice alike. The speaker, and author of the approach, has solved million-dollar problems in industry through its use. He has also taught this approach to professional engineers in several countries.

About the Speaker:

Dr. Jose Martinez-Escanaverino is a scholar with experience in engineering education and research at universities in Cuba, Venezuela, Brazil, Germany, and Mexico. He is also an engineering consultant with international experience in complex industrial problem solving. He holds Ph.D. and B.Sc. degrees in Engineering from the Higher Polytechnic Institute of Havana, Cuba. In addition, he was a Member of the Cuban Academy of Sciences for 16 years (1996 – 2011), and its Vice President – Engineering Sciences – for 5 years (2003-2008). Currently, Dr. Martinez-Escanaverino is a Canadian permanent resident.