Maker Faire Singapore

Saturday & Sunday
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Singapore University of Technology and Design

NUS National University of Singapore

School of Computing

Early Draft
Workshop on Computational Thinking: A Gentle Introduction to Computer Science

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Abstract:

Computational Thinking has been said to be the fourth R, in tandem with the current 3R (Reading, wRiting, and aRithmetic). And many have recognized the importance of CT as a life skill for all in the 21st century and beyond. In this workshop, we will give a gentle introduction to CT via three fun and thought-provoking hands-on activities that expose participants to the FUN and the thinking processes behind CT. These activities include some of the following: (a) Bill Gates and Pancake Flipping (introduction to algorithms), (b) Reading your mind with matheMAGIC, (c) Fun with Sorting Networks, (d) Looking at our world Recursively, (e) Your Own AI for Tic-Tac-Toe. The workshop will close with reflections on how these activities link to real-life problem solving in computer science and everyday things in our lives.

Come with an open mind and a questioning attitude.

Brief Bios of the Presenters:

Prof. Leong Hon Wai (梁汉槐) is a *Computational Thinkerer* (a person who tinkers with computational thinking (CT)) with the NUS School of Computing, Department of Computer Science. He enjoys research and teaching of algorithms & CT for more than 30 years. As a teacher, he specializes in finding simple ways to explain complicated subject matters and loves to integrate CT and mindset-change in his classes. He is passionate about fostering the *love for Computing and Mathematics* to all, and especially to young students. He works with school students via outreach talks and workshops on CT, creative problem solving, matheMAGIC; he also mentors students' research projects. In 1992, he founded the Singapore training program for the International Olympiad in Informatics (IOI). In 2008, he started a coding competition for primary school students (CXA Junior category). (url: http://www.comp.nus.edu.sg/~leonghw/)

Dr. Melvin Zhang is an avid programmer who enjoys designing and implementing novel algorithms. As the CTO of Cosmiqo, Melvin is in charge of developing its sensor data aggregation and analytics platform. In his spare time, Melvin works on the AI for Magarena, an open source card game project. Melvin received his B. Comp (Hons) and Ph.D. degrees from NUS School of Computing.