University at Buffalo The State University of New York

COMPUTER SCIENCE AND ENGINEERING

Presents

Fahiem Bacchus, University of Toronto

Optimization via MaxSat

Optimization plays a critical role in many areas of Computer Science and a variety of techniques, both approximate and exact, have been developed to solve optimization problems. Many of these optimization problems can be encoded in clausal form (CNF) as MaxSat instances. The aim of the work is to develop an effective exact MaxSat solver that can then be used as a black box optimizer for a range of different problems. Such a solver would support both exact and approximate solving of optimization problems by the simple device of encoding to MaxSat. In this talk I will discuss my recent work with Jessica Davies on the MaxHS solver. MaxHS is a hybrid solver that exploits both modern SAT solving technology and and modern Mixed Integer Programming (MIPS) solving technology.

Bio: Fahiem Bacchus is a Professor of Computer Science at the University of Toronto. His research fits broadly in the area of Knowledge Representation and Reasoning, a sub-field of Artificial Intelligence. He has made a number of key contributions during his career, including the development of logics for representing different forms of probabilistic knowledge and automated planning algorithms that can exploit domain specific control knowledge expressed in Linear Temporal Logic (LTL). For the past 15 years his work has concentrated on automated reasoning algorithms for solving various forms of the satisfiability problem: finding a model (SAT), counting the number of models (#SAT), solving quantified Boolean formulas (QBF), and finding optimal models (MaxSat). His group has been successful in building award winning solvers for all of these problems.

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3:30 – 4:30 PM

University at Buffalo – North Campus – Davis 113A

This talk is free and open to the public

For more information, email cse-dept@cse.buffalo.edu or contact (716) 645-3180