CASPER

Baylor University and CASPER present:

Dr. Ernesto Gomez

Professor of Computer Science and Engineering
California State University San Bernardino

Shortcutting algorithms for fun, profit and science

Abstract: Parallelism is the main source of speedup in computing, scientific and otherwise. For over thirty years the fastest supercomputers have been parallel machines, and for the last ten we have been seeing the same thing in commodity machines. So why are we still mostly parallelizing sequential algorithms? Do we think the best algorithms are always sequential? Actually we do - and have fairly solid arguments for that belief.

In this talk, we point to the holes in the standard arguments using a counterexample: "shortcutting". We started from an analysis of what is different between sequential and concurrent execution and designed a method to take advantage of the differences.

We have experimental results, more theory on where our methods could work (and where they probably won't), and future directions.

Bio: Dr. Ernesto Gomez is Professor of Computer Science and Engineering at California State University San Bernardino.

He started out as a physicist, with an AB from Cornell and an MS from University of Puerto Rico. He did his MS research at Arecibo Observatory, participating in the ionospheric heating experiment.

He taught Physics and Astronomy for several years at Catholic University in Ponce, P.R. but then left academia to work as a self employed consultant in computer applications.

Dr. Gomez founded his own software company:Trilobyte Inc., for development of science and engineering support tools. As part of this effort, he devised and implemented the THIRD computer language, inspired by FORTH and Lisp, which he used in multiple applications for real time instrumentation control in industrial QC labs and also in one topics course taught at University of Puerto Rico.

Following a move to Houston Texas, Dr.. Gomez decided to return to academia, which led him to pursue a PhD degree, this time in Computer Science. He began his studies at University of Houston, but was able to transfer to The University of Chicago, following L.Ridgway Scott his dissertation advisor. At Chicago, he was part of the FLASH project, funded by DOE and working with Argonne National Laboratory; in an effort to develop code to model type 1a supernovae. He devised the initial concept of shortcutting and the first test codes as part of his PhD dissertation.

On graduation from Chicago, he accepted a position at Cal State San Bernardino, where he is currently a professor, and where he started his collaboration with Dr. Keith Schubert of Baylor University.

Friday, May 9, 2014, 2:30 PM

Baylor Sciences Building - Room C.105

For more information, contact Sherri Honza at 254-710-1271.