University at Buffalo
The State University of New York

Department of Computer Science and Engineering

Presents

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Computational Forensics

The objective of forensic analysis is to begin with observed evidence and to determine its source. Computational forensics is analogous to similar efforts in other scientific disciplines, e.g., computational geometry, computational vision, computational biology, computational chemistry, etc., where human-based approaches ?to convert data to knowledge are translated into algorithms and software. In forensics this amounts to converting evidence profiles into knowledge with probative value, e.g., the extent of individualization or class-characterization. Computational forensics can play a role in overcoming several shortcomings of the forensic sciences which have received much recent public attention and criticism. The talk will give an ontology of forensics distinguishing the terms digital forensics, classical forensics and computational forensics. Three major topics spanning the many sub-disciplines of forensics are: (i) automating the interpretation of physical evidence, (ii) developing software tools for human forensic examination, and (iii) establishing the probative value of evidence, e.g., quantification of uncertainty in making a match between evidence and source. An overview of probability formulations, search methods and human-interactive systems is given using physical pattern evidence examples of finger-prints, shoe-prints and handwriting.

Thursday, September 17, 2009 @ 3:30 pm

Knox 109