

Christopher Raphael

Associate Professor of Informatics
Adjunct Associate Professor of Music Theory
University of Indiana School of Informatics

Friday, April 22, 2:00–3:00 pm @ EEB 248

Music Plus One

See http://xavier.informatics.indiana.edu/~craphael/music_plus_one/mpo.html

ABSTRACT: I will discuss my ongoing work in creating a computer system that simulates a sensitively conducted orchestra in a non-improvisatory composition for soloist and orchestra.

My accompaniment system synthesizes a number of knowledge sources including the musical score, on-line analysis of the soloist's performance, and the musical interpretations demonstrated by both the soloist and orchestra in rehearsal. I present a probabilistic model – a Bayesian Belief Network that represents these disparate knowledge sources in a coherent framework.

During live performance, my system "listens" to the soloist by using a hidden Markov model and conducts the orchestra through principled real-time decision-making engine that incorporates all currently available information for each decision. I will provide a live demonstration of my system on the Strauss Oboe Concerto.

Christopher Raphael is currently an Associate Professor in the School of Informatics and Indiana University, Bloomington. His research interests center around applications to music using Graphical models.

As a former professional oboist, his musical experience includes appearing as a soloist with the San Francisco Symphony as a winner of their Young Artist competition, and a fellowship to Tanglewood.

Thursday, April 21, 6:30pm-9:10pm (PHE223): Christopher Raphael will be guest teaching in **engineering approaches to music perception and cognition** (ISE575/CSCI575/EE675). See links to papers at <http://www-scf.usc.edu/~ise575>. Visitors welcome.

Hosted by: Elaine Chew, echew@usc.edu, Integrated Media Systems Center,
Epstein Department of Industrial and Systems Engineering

