Panel on the OMRAS Approach to Music Information Retrieval in the Real World

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INTRODUCTION

Music information retrieval is truly a new discipline, in that it is only recently—especially through the ISMIR conferences—that representatives from most of the interested communities of MIR have been able to meet, discuss techniques and common problems and begin to plan a united strategy. The joint US/UK award in 1999 of three years of research funding to the OMRAS project (www.omras.org) was a direct catalyst of the ISMIR conferences: the first ISMIR was organized largely by OMRAS staff, and the series would have been unlikely to receive the generous support of the U.S. National Science Foundation without the existence of OMRAS.

This panel will seek to show how the very diverse group of OMRAS researchers have been able to combine their various insights and talents in a complex project which draws on several distinct academic disciplines. We also hope to give the first full, public demonstration of an integrated OMRAS MIR system, from polyphonic audio query to score-notation result-display, at the panel session.

1. PANELISTS

The OMRAS development team, together with a distinguished external panelist with experience in many of these areas, will be present to discuss their individual and collective contributions to an integrated system:

Tim Crawford, Computing, City University, London (formerly King's College, London): panel moderator, UK team leader and general OMRAS coordinator, probabilistic harmonic description

Dr Donald Byrd, School of Music, Indiana University: US team leader, composer and developer of Nightingale Search module (score notation)

Matthew Dovey, Oxford University: designer of OMRAS system architecture and integration strategy

Prof. Mark Sandler, Electronic Engineering, Queen Mary College, London: audio team leader

Jeremy Pickens, PhD student, CIIR, University of Massachusetts: IR aspects and Java programming, language modeling, evaluation

Juan-Pablo Bello, PhD student, Electronic Engineering, Queen Mary College, London: polyphonic audio music transcription

Giuliano Monti, PhD student, Electronic Engineering, Queen Mary College, London: polyphonic audio music transcription

Dr Jose Montalvo, composer, research assistant, School of Music, Indiana University: system integration and Java programming

Dr Ichiro Fujinaga, external panelist, McGill University: Optical Music Recognition expert and collaborator on the Levy Sheet Music Collection OMR/MIR project (Johns Hopkins University)

2. POSITION STATEMENT

OMRAS (Online Music Recognition and Searching) is a three-year project funded jointly by the National Science Foundation (US) and the Joint Information Systems Committee (UK) through the International Digital Libraries Initiative. It brings together researchers from the two countries to work together on a somewhat open-ended MIR project, whose principal intention was to investigate some of the various techniques that might form part of an integrated system. OMRAS was never conceived as a single 'killer application', but rather as a suite of modules that might be custom-assembled into a system according to the requirements of the user. Thus it might take different forms according to whether the user is a musicologist investigating a historical composer's use of musical motives or themes, for example, or simply a music-lover attempting to track down a familiar tune.

An unusual feature of the OMRAS approach is the attempt to bridge the gap between the separate domains of digital audio and symbolic music notation. While most MIR efforts are restricted to a single one of these domains, OMRAS tackles head-on the issues raised by the difficulties of polyphonic music recognition, which include the necessity for search strategies that are robust against input error of various kinds, in the belief that all 'real-world' applications in MIR must inevitably face these problems at some point.

3. MODERATOR'S BIOGRAPHY

Tim Crawford worked for 15 years as a freelance lute-player in London's early music scene before joining King's College, London, in 1989. His musicological research, principally in historical sources of lute music and its unusual notation, has led to the development of a Macintosh program for the display, editing, printing and playback of music in lute tablature. As well as OMRAS, which arose out of earlier work with Donald Byrd and Matthew Dovey, he works on the *Electronic Corpus of Lute Music* (www.ecolm.org), which for the first time will make a significant body of lute music available for computer-aided research. He joined the Centre for Computational Creativity at City University, London, at the beginning of October 2002.