

MIREX

Music Information Retrieval Evaluation eXchange

An Overview



Ichiro Fujinaga

Schulich School of Music

McGill University

MIREX

Music Information Retrieval Evaluation eXchange

- ❖ Began in 2005 by Stephen Downie (UIUC)
- ❖ Tasks defined by community debate
- ❖ Data sets collected and/or donated
- ❖ Participants submit code to IMIRSEL (International Music Information Retrieval Systems Evaluation Laboratory, UIUC)
- ❖ Code rarely works first try!
- ❖ Huge labour consumption getting programmes to work
- ❖ Meet at ISMIR to discuss results

MIREX Model

- ❖ Based upon the TREC (Text REtrieval Conference) approach:
 - ❖ Standardized queries/tasks
 - ❖ Standardized collections
 - ❖ Standardized evaluations of results
- ❖ Not like TREC with regard to distributing data collections to participants:
 - ❖ Music copyright issues
 - ❖ ground-truth issues
 - ❖ overfitting issues

MIREX Participation

	2005	2006	2007	2008	2009
Tasks	10	13	12	18	26
Individuals	82	50	73	84	138
Runs	86	92	122	169	289

Total: 758

MIREX TASKS

Audio Artist Identification

Audio Onset Detection

Audio Beat Tracking

Audio Tag Classification

Audio Chord Detection

Audio Tempo Extraction

Audio Classical Composer ID

Multiple F0 Estimation

Audio Cover Song Identification

Multiple F0 Note Detection

Audio Drum Detection

Query-by-Singing/Humming

Audio Genre Classification

Query-by-Tapping

Audio Key Finding

Score Following

Audio Melody Extraction

Symbolic Genre Classification

Audio Mood Classification

Symbolic Key Finding

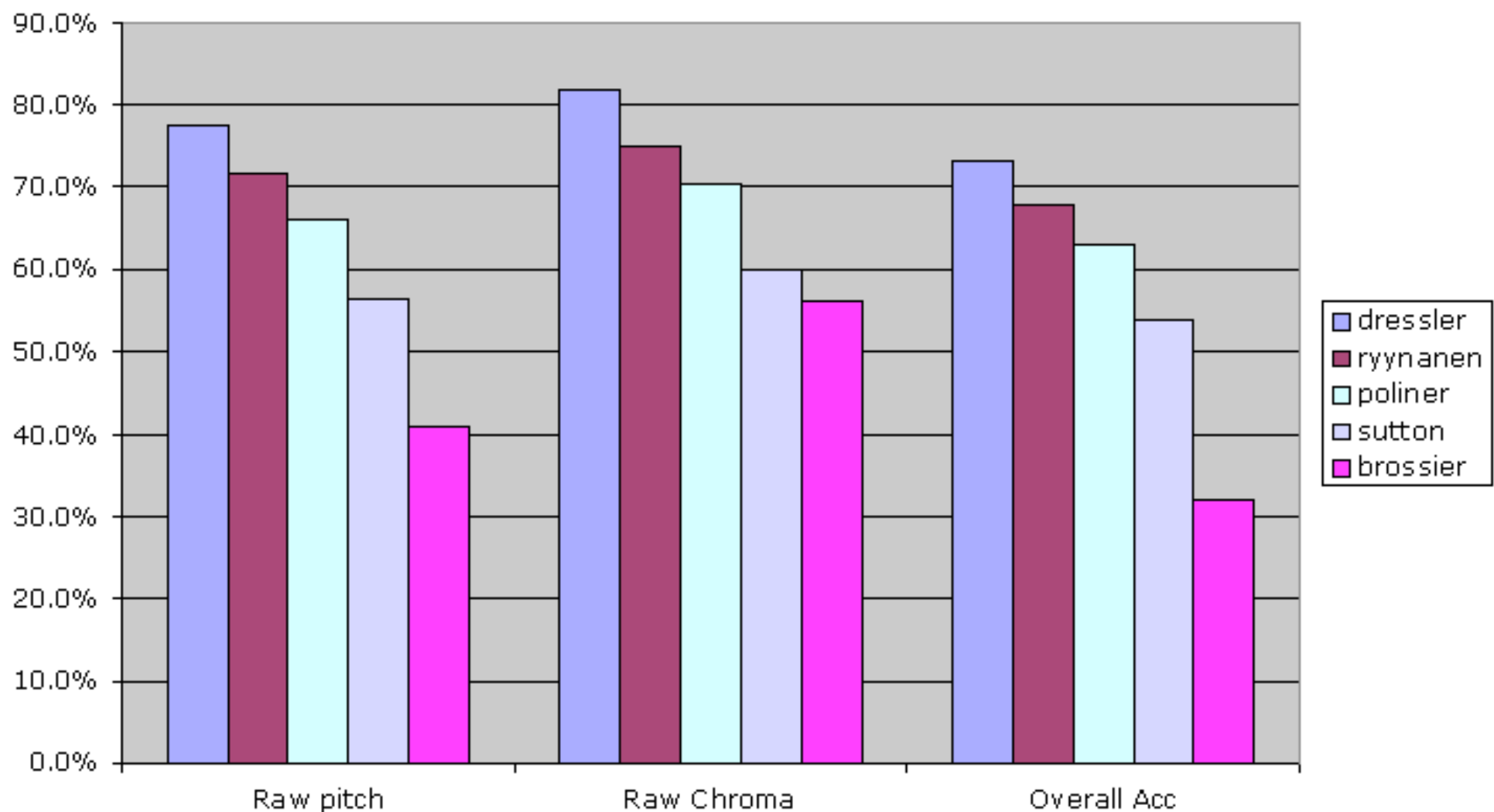
Audio Music Similarity

Symbolic Melodic Similarity

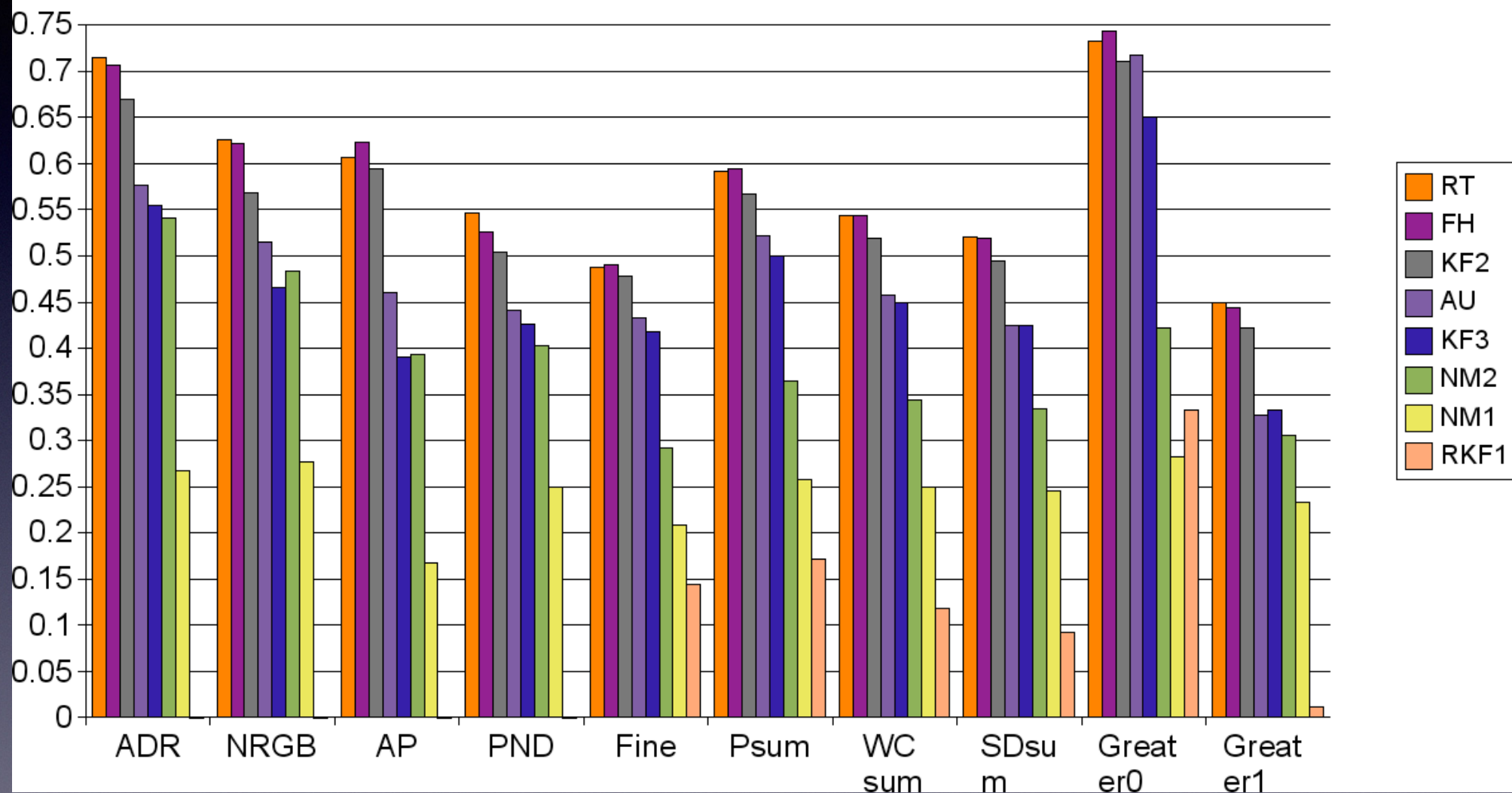
Number of participants per track

TASK	05	06	07	08
Audio Artist Identification	7		7	11
Audio Beat Tracking		5		
Audio Chord Detection				15*
Audio Classical Composer ID			7	11
Audio Cover Song Identification		8	8	8
Audio Drum Detection	8			
Audio Genre Classification	15		7	26*
Audio Key Finding	7			
Audio Melody Extraction	10	10 *		21*
Audio Mood Classification			9	13
Audio Music Similarity		6	12	
Audio Onset Detection	9	13	17	
Audio Tag Classification				11
Audio Tempo Extraction	13	7		
Multiple F0 Estimation			16	15
Multiple F0 Note Detection			11	13
Query-by-Singing/Humming		23 *	20 *	16*
Query-by-Tapping				5
Score Following		2		3
Symbolic Genre Classification	5			
Symbolic Key Finding	5			
Symbolic Melodic Similarity	7	18 **	8	

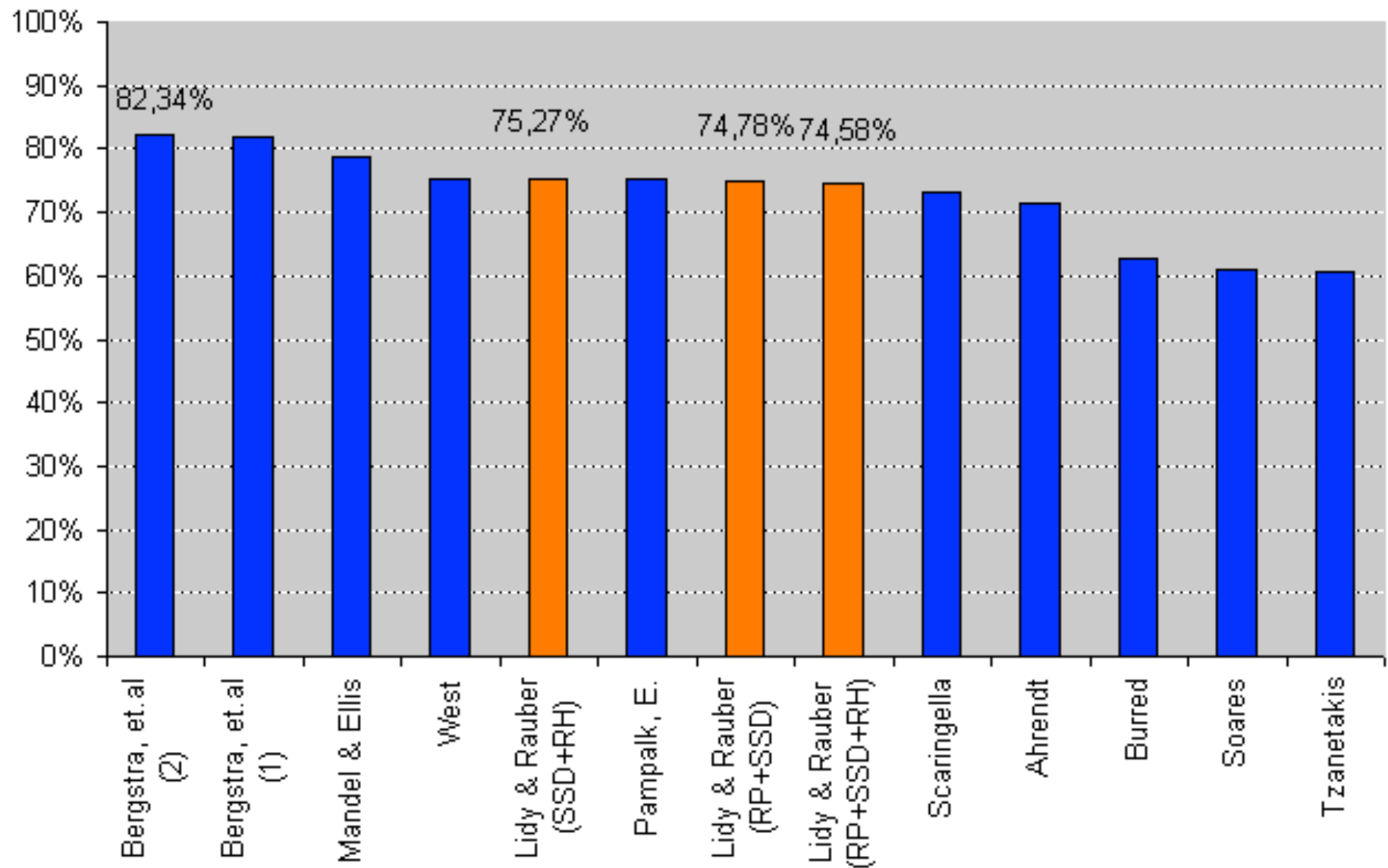
MIREX2006 Audio Melody Results: MIREX 2005 Dataset - All



RISM - Monophonic Melodic Similarity




MIREX 2005 Audio Genre Classification



Evalutron 6000

(MIREX: 2006)



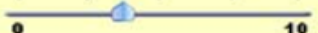


 **Evalutron 6000**

Welcome guest [Sign out](#) [Change My Settings](#)

Home Audio Player Selection My Assignment Instructions

THIS PAGE CONTAINS 10 CANDIDATES FOR QUERY ID # 2

[< Previous Query](#) [Next Query >](#)

Query ID#2  First Mid Last Align Player	Listen to Candidate #b011647  First Mid Last	Select Broad Category <input type="radio"/> NOT Similar <input checked="" type="radio"/> Somewhat Similar <input type="radio"/> VERY Similar [SAVED]	Select Fine Score  <input type="text" value="3.8"/> SAVED
Align Player	Listen to Candidate #b011618 First Mid Last	Select Broad Category <input type="radio"/> NOT Similar <input checked="" type="radio"/> Somewhat Similar <input type="radio"/> VERY Similar [SAVED]	Select Fine Score  <input type="text" value="8"/> SAVED
Align Player	Listen to Candidate #b061811 First Mid Last	Select Broad Category <input checked="" type="radio"/> NOT Similar <input type="radio"/> Somewhat Similar <input type="radio"/> VERY Similar [SAVED]	Select Fine Score  <input type="text" value="1.2"/> SAVED

Ongoing Issues

- ❖ Non-statically linked libraries
- ❖ Input/Output variances from defined formats
- ❖ Buggy code: Lack of error logging!
- ❖ Really need runtime feedback to check progress
- ❖ Leaving task definitions to last minute
- ❖ Result metrics and data explosion
- ❖ Need stronger community leadership in tasks

The Networked Environment for Music Analysis Do-it-Yourself Web-Service (NEMA-DIY)

The logo for NEMA (The Networked Environment for Music Analysis) features the word "nema" in a blue, lowercase, sans-serif font. A yellow audio waveform is superimposed over the letters, starting from the 'n', peaking over the 'e', dipping over the 'm', and rising again over the 'a'. The background is black, decorated with several orange and yellow circles of varying sizes, some of which are partially obscured by the waveform.

nema