

MIREX 2010 Evaluation Results

J. Stephen Downie & IMIRSEL
University of Illinois at Urbana-Champaign
email: jdownie@illinois.edu

Audio Music Similarity

SubID	Participants	Avg. Fine Score
BWL1	Bogdanov, Wack, Laurier	49.70
PS1	Pohle, Schnitzer	55.08
PSS1	Pohle, Seyerlehner, Schnitzer	54.98
RZ1	Zufall	16.67
SSPK2	Seyerlehner, Schedl, Pohle, Knees	56.64
TLN1	Tzanetakis, Lagrange, Ness	45.84
TLN2	Tzanetakis, Lagrange, Ness	46.54
TNL1	Tzanetakis, Ness, Lagrange	46.60

Audio Onset Detection

SubID	Participants	Avg. F-measure
BES1	Böck, Eyben, Schuller	0.79
AR3	Roebel	0.78
AR2	Roebel	0.77
AR4	Roebel	0.77
AR5	Roebel	0.76
TZC1	Tan, Zhu, Chaisorn	0.74
TZC2	Tan, Zhu, Chaisorn	0.73
BT2	Thoshkahna	0.73
BT3	Thoshkahna	0.73
BT1	Thoshkahna	0.73
BT4	Thoshkahna	0.73
TZC5	Tan, Zhu, Chaisorn	0.73
TZC3	Tan, Zhu, Chaisorn	0.70
TZC4	Tan, Zhu, Chaisorn	0.69
ME1	Eckart	0.67
TGGL1	Tzanetakis, Gouyon, Gustavo Martins, Lobato Oliveira	0.59
RVCCR1	Rodriguez Serrano, Vera-Candeas, Cabañas-Molero, Carabias-Orti, Ruiz Reyes	0.44
RVCCR2	Rodriguez Serrano, Vera-Candeas, Cabañas-Molero, Carabias-Orti, Ruiz Reyes	0.30

Audio Cover Song Identification

SubID	Participants	Avg. Prec.
MHRAF1	Martin, Hanna, Robine, Allali, Ferraro	0.24
MOD1	Montecchio, Orio, Di Buccio	0.15
RMHAR1	Rocher, Martin, Hanna, Allali, Robine, Ferraro	0.29

Audio Melody Extraction

SubID	Participants	Overall Accuracy		
		MIREX'05	ADC'04	INDIAN'08
HJ1	Hsu, Jang	0.54	0.61	0.77
JY1	Joo, Jo, Yoo	0.62	0.70	0.80
JY2	Joo, Jo, Yoo	0.61	0.72	0.80
SG1	Salamon, Gomez	0.62	0.70	0.78
TOOS1	Tachibana, Ono, Ono, Sagayama	0.61	0.54	0.72

Audio Melody Extraction

SubID	Participants	Overall Accuracy		
		MIREX'09 0db	MIREX'09 +5db	MIREX'09 -5db
HJ1	Hsu, Jang	0.76	0.83	0.63
JY1	Joo, Jo, Yoo	0.63	0.79	0.47
JY2	Joo, Jo, Yoo	0.63	0.79	0.47
SG1	Salamon, Gomez	0.74	0.81	0.58
TOOS1	Tachibana, Ono, Ono, Sagayama	0.72	0.79	0.63

Query By Tapping

SubID	Participants	Task 1A MRR	Task 1B MRR	Task 2 MRR
ML4	Mirel, Levy	0.80	0.71	0.78
HRFA1	Hanna, Robine, Ferraro, Allali	0.77	0.70	0.66

Audio Chord Estimation

SubID	Participants	Weighted overlap ratio
CWB1	Cho, Weiss, Bello	0.78
EW1*	Ellis, Weller	0.73
EW2*	Ellis, Weller	0.72
EW3	Ellis, Weller	0.76
EW4	Ellis, Weller	0.77
KO1	Khadkevich, Omologo	0.78
MD1	Mauch, Dixon	0.79
MK1*	Khadkevich, Omologo	0.74
MM1	Mauch	0.79
OFG1	Oudre, Févotte, Grenier	0.74
PP1	Papadopoulos, Peeters	0.68
PVM1	Pauwels, Varewyck, Martens	0.73
RRHS1	Rocher, Robine, Hanna, Strandh	0.71
RRHS2	Rocher, Robine, Hanna, Strandh	0.57
UUOS1	Ueda, Uchiyama, Ono, Sagayama	0.76

Symbolic Music Similarity

SubID	Participants	Avg. Fine Score (0-1)
HFRA1	Hanna, Ferraro, Robine, Allali	0.56
JU1	Urbano	0.58
JU2	Urbano	0.58
JU3	Urbano	0.58
JU4	Urbano	0.61
LL1	Laitinen, Lemström	0.58
LL2	Laitinen, Lemström	0.41
RI1	Rizo, Iñesta	0.55
RI2	Rizo, Iñesta	0.38
RI3	Rizo, Iñesta	0.47
RI4	Rizo, Iñesta	0.52
SU1	Suyoto, Uitdenbogerd	0.54
SU2	Suyoto, Uitdenbogerd	0.51

Real-time Audio to Score Alignment

SubID	Participants	Total Precision
SUROS1	Suzuki, Ueda, Raczynski, Ono, Sagayama	73.93%
DP1	Duan, Pardo	67.14%
RVCCR4	Rodriguez Serrano, Vera-Candeas, Carabias-Orti, Cabañas-Molero, Ruiz Reyes	64.50%
RVCCR3	Rodriguez Serrano, Vera-Candeas, Carabias-Orti, Cabañas-Molero, Ruiz Reyes	62.79%
AW1	Arzt, Widmer	50.33%

Multi-F0 Estimation

SubID	Participants	Accuracy
AR1	Yeh, Roebel	0.65
AR2	Yeh, Roebel	0.66
AR3	Yeh, Roebel	0.69
AR4	Yeh, Roebel	0.69
BD1	Benetos, Dixon	0.47
CRVRC1	Canadas Quesada, Rodriguez Serrano, Vera-Candeas, Ruiz Reyes, Carabias-Orti	0.49
CRVRC3	Canadas Quesada, Rodriguez Serrano, Vera-Candeas, Ruiz Reyes, Carabias-Orti	0.46
DCL1	Dessein, Cont, Lemaitre	0.46
DHP1	Duan, Han, Pardo	0.55
JW1	Wu, Ono, Sagayama	0.35
JW2	Wu, Ono, Sagayama	0.36
LYLC1	Lee, Yang, Lin, Chen	0.37
NNTOS1	Nakano, Nakamura, Tanuma, Ono, Sagayama	0.06

Multi-F0 Estimation Instrument Tracking

SubID	Participants	Accuracy
DHP1	Duan, Han, Pardo	0.21

Audio Tempo Estimation

SubID	Participants	P-Score
BES2	Böck, Eyben, Schuller	0.74
ES1	Eyben, Schuller	0.77
GKC1	Gkiokas, Katsouros, Carayannis	0.81
GT1	Tzanetakis	0.62
NW2	Wack	0.79
OL1	Lartillot	0.67
TL1	Lee	0.76

Audio Key detection

SubID	Participants	Weighted Key Score
GP8	Peeters	0.82
PVM2	Pauwels, Varewyck, Martens	0.80
RRH1	Rocher, Robine, Hanna	0.66
RRH2	Rocher, Robine, Hanna	0.54
UUOS2	Ueda, Uchiyama, Ono, Sagayama	0.76

Query By Singing/Humming

SubID	Participants	Task1A MRR	Task1B MRR	Task2
HAFR1	Hanna, Allali, Ferraro, Robine	0.67	0.70	6.98
JY1	Yang	0.95	0.42	9.13
JY2	Yang	0.93	0.47	9.07
YF1	Yeh, Fang	0.92	0.42	8.74
YF2	Yeh, Fang	0.87	0.84	8.74

Audio Beat Tracking

SubID	Participants	F-Measure	
		MCK	MAZ
BES3	Böck, Eyben, Schuller	53.16	68.46
BES4	Böck, Eyben, Schuller	54.50	47.30
GP3	Peeters	50.27	58.74
GP4	Peeters	49.89	47.08
GP5	Peeters	49.53	48.27
GP6	Peeters	49.30	40.13
LGG1	Lobato Oliveira, Gouyon, Gustavo Martins	47.86	40.98
LGG2	Lobato Oliveira, Gouyon, Gustavo Martins	49.97	29.62
MRVCC1	Mata Campos, Rodriguez Serrano, Vera-Candeas, Carabias-Orti, Canadas Quesada	25.70	41.48
MRVCC2	Mata Campos, Rodriguez Serrano, Vera-Candeas, Carabias-Orti, Canadas Quesada	17.79	49.15
NW1	Wack	35.56	49.26
TL2	Lee	41.97	27.59
ZTC1	Zhu, Tan, Chaisorn	24.64	1.16

MIREX 2010 Evaluation Results

J. Stephen Downie & IMIRSEL
University of Illinois at Urbana-Champaign
email: jdownie@illinois.edu

Structural Segmentation

FP clustering F-measure

SubID	Participants	MIREX '09	MIREX '10
BV1	BIMBOT, Vincent	0.50	0.45
BV2	BIMBOT, Vincent	0.49	0.28
GP7	Peeters	0.54	0.34
MHRAF2	Martin, Hanna, Robine, Allali, Ferraro	0.55	0.29
MND1	Mauch, Noland, Dixon	0.61	0.33
WB1	Weiss, Bello	0.54	0.31

Multi-F0 Note Tracking - Mixed Dataset

SubID	Participants	Avg. F-measure Onset Only	Avg. Overlap
AR5	Yeh, Roebel	0.53	0.73
AR6	Yeh, Roebel	0.53	0.73
CRVRC2	Canadas Quesada, Rodriguez Serrano, Vera-Candeas, Ruiz Reyes, Carabias-Orti	0.33	0.66
CRVRC4	Canadas Quesada, Rodriguez Serrano, Vera-Candeas, Ruiz Reyes, Carabias-Orti	0.21	0.62
DCL2	Dessein, Cont, Lemaitre	0.40	0.73
DHP2	Duan, Han, Pardo	0.41	0.62
JW3	Wu, Ono, Sagayama	0.28	0.48
JW4	Wu, Ono, Sagayama	0.27	0.48
LYLC2	Lee, Yang, Lin, Chen	0.29	0.56

Multi-F0 Note Tracking - Piano Only

SubID	Participants	Avg. F-measure Onset Only	Avg. Overlap
AR5	Yeh, Roebel	0.60	0.56
AR6	Yeh, Roebel	0.60	0.56
CRVRC2	Canadas Quesada, Rodriguez Serrano, Vera-Candeas, Ruiz Reyes, Carabias-Orti	0.45	0.57
CRVRC4	Canadas Quesada, Rodriguez Serrano, Vera-Candeas, Ruiz Reyes, Carabias-Orti	0.24	0.55
DCL2	Dessein, Cont, Lemaitre	0.53	0.56
DHP2	Duan, Han, Pardo	0.34	0.52
JW3	Wu, Ono, Sagayama	0.39	0.37
JW4	Wu, Ono, Sagayama	0.38	0.36
LYLC2	Lee, Yang, Lin, Chen	0.52	0.49

Audio Tag Classification - Major Minor

SubID	Participants	Class. F-Measure	Affinity AUC-ROC
BMPE1	Bergstra, Mandel, Pascanu, Eck	0.25	0.87
BRPC3	Burred, Ramona, Peeters, Cornu	0.48	0.87
BRPC4	Burred, Ramona, Peeters, Cornu	0.45	0.86
GP2	Peeters	0.45	0.75
HE2	Hamel, Eck	0.33	0.77
MP1	Mandel	0.25	0.71
MP3	Mandel, Pascanu	0.30	0.86
SSPK3	Seyerlehner, Schedl, Pohle, Knees	0.45	0.85
TN3	Tzanetakis, Ness	0.46	0.88
TN5	Tzanetakis, Ness	0.46	0.88
WLJW3	Wang, Lo, Jeng, Wang	0.38	0.86
WLJW5	Wang, Lo, Wang	0.28	0.75
WLJW6	Wang, Lo, Wang	0.28	0.64

Audio Tag Classification - Mood

SubID	Participants	Class. F-Measure	Affinity AUC-ROC
BMPE1	Bergstra, Mandel, Pascanu, Eck	0.25	0.86
BRPC3	Burred, Ramona, Peeters, Cornu	0.47	0.85
BRPC4	Burred, Ramona, Peeters, Cornu	0.46	0.85
GP2	Peeters	0.45	0.75
HE2	Hamel, Eck	0.15	0.65
MP1	Mandel	0.23	0.62
MP3	Mandel, Pascanu	0.26	0.85
SSPK3	Seyerlehner, Schedl, Pohle, Knees	0.44	0.83
TN3	Tzanetakis, Ness	0.37	0.86
TN5	Tzanetakis, Ness	0.37	0.86
WLJW3	Wang, Lo, Jeng, Wang	0.35	0.86
WLJW5	Wang, Lo, Wang	0.45	0.84
WLJW6	Wang, Lo, Wang	0.45	0.70

Audio Train/Test

Classification Accuracy

SubID	Participants	Mood	Composer	Latin
BMPE2	Bergstra, Mandel, Pascanu, Eck	0.55	0.47	-
BRPC1	Burred, Ramona, Peeters, Cornu	0.59	-	0.71
BRPC2	Burred, Ramona, Peeters, Cornu	0.59	0.55	-
FCY1	Feng, Chen, Yang	0.60	-	-
FCY2	Feng, Chen, Yang	0.60	-	-
GP1	Peeters	0.63	0.46	0.67
GR1	Greco, Rauber	0.61	0.52	0.60
HE1	Hamel, Eck	0.54	0.56	0.51
JR1	Ren	0.46	0.36	0.56
JR2	Ren	0.51	0.36	0.61
JR3	Ren	0.47	0.36	0.58
JR4	Ren	0.51	0.37	0.60
MBP1	Mandel	0.54	0.47	0.61
MP2	Mandel, Pascanu	0.36	0.37	0.57
MW1	Wu, Jang, Ren	0.54	0.54	0.38
RJ1	Ren, Jang	0.55	0.37	0.62
RJ2	Ren, Jang	0.50	0.36	0.60
RK1	Rao, Kini	0.55	0.54	0.51
RK2	Rao, Kini	0.48	0.51	0.42
RRS1	Rump, Raczynski, Sagayama	0.62	0.51	0.63
SSPK1	Seyerlehner, Schedl, Pohle, Knees	0.64	0.64	0.80
TN1	Tzanetakis, Ness	0.56	0.42	0.37
TN2	Tzanetakis, Ness	0.49	0.50	-
TN4	Tzanetakis, Ness	0.58	0.44	0.49
WLB1	Wack, Laurier, Bogdanov	0.56	0.65	0.68
WLB2	Wack, Laurier, Bogdanov	0.58	0.25	0.35
WLB3	Wack, Laurier, Bogdanov	0.63	0.41	0.49
WLB4	Wack, Laurier, Bogdanov	0.63	0.40	0.47
WLJW1	Wang, Lo, Jeng, Wang	0.54	-	-
WLJW2	Wang, Lo, Jeng, Wang	0.64	-	-

Special Thanks to: The Andrew W. Mellon Foundation, the National Science Foundation (Grant No. NSF IIS-0327371 and No. NSF IIS-0328471), IMIRSEL members (M. Bay, S. Clarke, A. Ehmann, X. Hu, M. C. Jones, A. Kumar, K. Muntashir, A. Shirk, M. Singh, K. West, D. Wright, & G. Zhu), the content providers, Evalutron graders, the MIR community, and the ISMIR 2010 organizing committee