MIREX 2013 Evaluation Results

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

Audio Train/Test: Mood Classification - MIREX08 Dataset

SubID	Participants	Accuracy
JJ1	Ming-Ju Wu, Jyh-Shing Roger Jang	0.68
PP1	Renato Panda, Rui Pedro Paiva	0.68
CJ1	Pei-Hsuan Chou, Jyh-Shing Roger Jang	0.68
JJ2	Ming-Ju Wu, Jyh-Shing Roger Jang	0.68
PRP3	Renato Panda, Bruno Rocha, Rui Pedro Paiva	0.68
PP2	Renato Panda, Rui Pedro Paiva	0.67
PRP4	Renato Panda, Bruno Rocha, Rui Pedro Paiva	0.67
BBLJK4	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.66
BBLJK2	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.66
SSKS1	Klaus Seyerlehner, Markus Schedl, Peter Knees, Reinhard Sonnleitner	0.66
PRP1	Renato Panda, Bruno Rocha, Rui Pedro Paiva	0.65
CJ2	Pei-Hsuan Chou, Jyh-Shing Roger Jang	0.65
BBLJK1	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.65
KDKA2	Patrick Kramer, Christian Dittmar, Johannes Krasser, Jakob Abesser	0.64
KDKA1	Patrick Kramer, Christian Dittmar, Johannes Krasser, Jakob Abesser	0.62
BBLJK3	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.60
BBLJK5	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.58
DS1	Dan Stowell	0.49
DM3	Franz de Leon, Kirk Martinez	0.49
DM4	Franz de Leon, Kirk Martinez	0.49
RPP1	Bruno Rocha, Renato Panda, Rui Pedro Paiva	0.48
PRP2	Renato Panda, Bruno Rocha, Rui Pedro Paiva	0.47
RPP2	Bruno Rocha, Renato Panda, Rui Pedro Paiva	0.29

Real-time Audio to Score Alignment

SubID	Participants	Total Precision
CVRCR1	Julio Jose Carabias-Orti, Francisco Jose Rodriguez-Serrano, Pedro Vera-Candeas, Pablo Cabañas-Molero, Nicolas Ruiz-Reyes	0.87
CJ5	ChunTa Chen, Jyh-Shing Roger Jang	0.67

Audio Key detection

SubID	Participants	Weighted Key Score
CF3	Chris Cannam, Luis Figueira	0.87
GP4	Geoffroy Peeters	0.82
PP5	Johan Pauwels, Geoffroy Peeters	0.81

Symbolic Music Similarity

SubID	Participants	Avg. Fine Score (0-1)
JU1	Julián Urbano	0.61
JU2	Julián Urbano	0.61
JU3	Julián Urbano	0.61
RTBB1	Carles Roig, Lorenzo J. Tardón,Ana María Barbancho, Isabel Barbancho	0.34
YHKH1	Sakurako Yazawa, Yuhei Hasegawa , Kouhei Kanamori, Masatoshi Hamanaka	0.21

Multi-F0 Estimation

SubID	Participants	Accuracy
BW1	Emmanouil Benetos, Tillman Weyde	0.66
CDM1	Tian Cheng, Simon Dixon, Matthias Mauch	0.62
CDM2	Tian Cheng, Simon Dixon, Matthias Mauch	0.62

Multi-F0 Note Tracking - Mixed Dataset

SubID	Participants	Avg. F-measure Onset Only	Avg. Overlap
BW2	Emmanouil Benetos, Tillman Weyde	0.55	0.88
CDM3	Tian Cheng, Simon Dixon, Matthias Mauch	0.51	0.86
BW3	Emmanouil Benetos, Tillman Weyde	0.48	0.88

Audio Train/Test: Composer Classification - MIREX08 Dataset

SubID	Participants	Accuracy
JJ2	Ming-Ju Wu, Jyh-Shing Roger Jang	0.65
SSKS1	Klaus Seyerlehner, Markus Schedl, Peter Knees, Reinhard Sonnleitner	0.67
JJ1	Ming-Ju Wu, Jyh-Shing Roger Jang	0.65
BBLJK4	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.51
BBLJK3	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.40
DM3	Franz de Leon, Kirk Martinez	0.68
BBLJK2	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.65
DM4	Franz de Leon, Kirk Martinez	0.70
BBLJK1	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.70
DS1	Dan Stowell	0.44
CJ1	Pei-Hsuan Chou, Jyh-Shing Roger Jang	0.65
AP1	Aggelos Pikrakis	0.50
CJ2	Pei-Hsuan Chou, Jyh-Shing Roger Jang	0.67
BBLJK5	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.41

Audio Train/Test: Genre Classification(Mixed)-MIREX08 Dataset

SubID	Participants	Accuracy
JJ1	Ming-Ju Wu, Jyh-Shing Roger Jang	0.76
JJ2	Ming-Ju Wu, Jyh-Shing Roger Jang	0.76
SSKS1	Klaus Seyerlehner, Markus Schedl, Peter Knees, Reinhard Sonnleitner	0.75
BBLJK1	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.74
BBLJK2	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.73
BBLJK4	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.70
BBLJK5	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.66
BBLJK3	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.63
DS1	Dan Stowell	0.58
CJ2	Pei-Hsuan Chou, Jyh-Shing Roger Jang	0.31
CJ1	Pei-Hsuan Chou, Jyh-Shing Roger Jang	0.31

Audio Music Similarity

SubID	Participants	Avg. Fine Score
SS2	Klaus Seyerlehner, Markus Schedl	55.21
SSPK	Klaus Seyerlehner, Markus Schedl, Tim Pohle, Peter Knees	54.10
PS1	Tim Pohle, Dominik Schnitzer	53.81
DM2	Franz de Leon, Kirk Martinez	48.07
GKC2	Aggelos Gkiokas, Vassilis Katsouros, George Carayannis	48.05
DM1	Franz de Leon, Kirk Martinez	46.26
GKC1	Aggelos Gkiokas, Vassilis Katsouros, George Carayannis	43.80
RA1	Roman Aliyev	18.86

Multi-F0 Note Tracking - Piano Only

SubID	Participants	Avg. F-measure Onset Only	Avg. Overlap
BW3	Emmanouil Benetos, Tillman Weyde	0.61	0.83
CDM3	Tian Cheng, Simon Dixon, Matthias Mauch	0.57	0.79
BW2	Emmanouil Benetos, Tillman Weyde	0.54	0.83

Audio Train/Test: Latin Classification - MIREX08 Dataset

SubID	Participants	Accuracy
AP1	Aggelos Pikrakis	0.78
SSKS1	Klaus Seyerlehner, Markus Schedl, Peter Knees, Reinhard Sonnleitner	0.76
JJ2	Ming-Ju Wu, Jyh-Shing Roger Jang	0.72
JJ1	Ming-Ju Wu, Jyh-Shing Roger Jang	0.72
CJ2	Pei-Hsuan Chou, Jyh-Shing Roger Jang	0.72
BBLJK2	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.68
CJ1	Pei-Hsuan Chou, Jyh-Shing Roger Jang	0.68
BBLJK1	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.66
BBLJK4	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.62
BBLJK5	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.60
BBLJK3	Karam Byun, Seung Ryoel Baek, Jong-Seol Lee, Sei-jin Jang, Moo Young Kim	0.58
DS1	Dan Stowell	0.57

Audio Tempo Estimation

SubID	Participants	P-Score
CDF3	Chris Cannam, Matthew Davies, Luis Figueira	0.74
GKC4	Aggelos Gkiokas, Vassilis Katsouros, George Carayannis	0.82
SB7	Sebastian Böck	0.80
FW3	Fu-Hai Frank Wu	0.83
ES4	Florian Eyben, Felix Weninger, Giacomo Ferroni, Björn Schuller	0.58
OL1	Olivier Lartillot	0.82
ES2	Florian Eyben, Björn Schuller	0.36
EWFS2	Florian Eyben, Felix Weninger, Giacomo Ferroni, Björn Schuller	0.48
EF1	Anders Elowsson, Anders Friberg	0.86
CB2	Chris Baume	0.61
HS1	Hendrik Schreiber	0.76

Audio Onset Detection

SubID	Participants	Avg. F-measure
SB2	Sebastian Böck	0.87
SB1	Sebastian Böck	0.87
SB4	Sebastian Böck	0.81
SB3	Sebastian Böck	0.80
CSF1	Chris Cannam, Dan Stowell, Luis Figueira	0.66
ZHZD1	Zhengchen Zhang, Dong-yan Huang, Renbo Zhao, Minghui Dong	0.82
FMEGS1	Giacomo Ferroni, Erik Marchi, Florian Eyben, Leonardo Gabrielli, Stefano Squartini, Björn Schuller	0.80
CF4	Chris Cannam, Luis Figueira	0.73
FMESS1	Giacomo Ferroni, Erik Marchi, Florian Eyben, Stefano Squartini, Björn Schuller	0.81
CB1	Chris Baume	0.63
MTB1	Emilio Molina Martínez, Lorenzo J. Tardón, Isabel Barbancho, Ana María Barbancho	0.38

Query By Singing/Humming

SubID	Participants	Task1A Hidden MRR	Task1A MRR	Task1B MRR	Task1C MRR	Task2 SC
BS1	Bartłomiej Stasiak	NA	NA	NA	NA	8.91
BS2	Bartłomiej Stasiak	0.55	0.59	NA	NA	NA
BS3	Bartłomiej Stasiak	NA	NA	0.91	0.71	NA
BS4	Bartłomiej Stasiak	NA	NA	0.93	0.71	NA
BS5	Bartłomiej Stasiak	NA	NA	0.56	0.45	NA
MR1	Music Radar	0.93	0.96	0.97	0.72	9.52
LNL1	Peng Li, Yuan Nie, Xiaoyan Li	0.86	0.90	0.93	0.81	NA
YJ1	Tzu-chun Yeh, Jyh-Shing Roger Jang	0.91	0.93	0.88	0.40	7.00
YJ2	Tzu-chun Yeh, Jyh-Shing Roger Jang	0.88	0.92	0.47	0.20	6.84

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
mirex
imirsel

The Andrew W. Mellon Foundation
nema

MIREX 2013 Evaluation Results

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

Audio Melody Extraction

		Overall Accuracy		
SubID	Participants	MIREX'05	ADC'04	INDIAN'08
SL1	Liming Song, Ming Li	0.54	0.58	0.63
CF1	Chris Cannam, Luis Figueira	0.47	0.67	0.58
YJ3	Tzu-chun Yeh, Jyh-Shing Roger Jang	0.36	0.42	0.51
YJ4	Tzu-chun Yeh, Jyh-Shing Roger Jang	0.52	0.46	0.70

Audio Melody Extraction

		Overall Accuracy		
SubID	Participants	MIREX'09 0db	MIREX'09 +5db	MIREX'09 -5db
SL1	Liming Song, Ming Li	0.64	0.73	0.50
CF1	Chris Cannam, Luis Figueira	0.46	0.54	0.39
YJ3	Tzu-chun Yeh, Jyh-Shing Roger Jang	0.52	0.55	0.44
YJ4	Tzu-chun Yeh, Jyh-Shing Roger Jang	0.54	0.58	0.44

Discovery of Repeated Themes and Sections

SubID	Participants	Task Version	R_est	P_est	R_occ	P_occ	Log Runtime
NF2	Oriol Nieto, Morwaread Farbood	Symbolic, Polyphonic	0.37	0.49	0.48	0.61	2.46
DM10	David Meredith	Symbolic, Polyphonic	0.58	0.57	0.81	0.53	2.96
DM9	David Meredith	Symbolic, Polyphonic	0.34	0.20	0.17	0.22	2.95
DM8	David Meredith	Symbolic, Polyphonic	0.61	0.42	0.72	0.51	2.95
DM7	David Meredith	Symbolic, Polyphonic	0.49	0.59	0.59	0.46	4.05
DM6	David Meredith	Symbolic, Polyphonic	0.25	0.18	0.00	0.00	4.09
DM5	David Meredith	Symbolic, Polyphonic	0.41	0.33	0.48	0.36	4.06
NF1	Oriol Nieto, Morwaread Farbood	Symbolic, Monophonic	0.42	0.47	0.41	0.59	2.03
DM10	David Meredith	Symbolic, Monophonic	0.65	0.55	0.77	0.54	2.21
DM9	David Meredith	Symbolic, Monophonic	0.45	0.29	0.36	0.57	2.25
DM8	David Meredith	Symbolic, Monophonic	0.56	0.42	0.57	0.66	2.29
DM7	David Meredith	Symbolic, Monophonic	0.53	0.57	0.76	0.68	3.21
DM6	David Meredith	Symbolic, Monophonic	0.37	0.32	0.40	0.49	3.19
DM5	David Meredith	Symbolic, Monophonic	0.44	0.38	0.59	0.66	3.20
NF4	Oriol Nieto, Morwaread Farbood	Audio, Polyphonic	0.22	0.28	0.01	0.07	1.56
NF3	Oriol Nieto, Morwaread Farbood	Audio, Monophonic	0.38	0.49	0.11	0.41	1.79

Audio Beat Tracking

		F-Measure		
SubID	Participants	MCK	MAZ	SMC
FW4	Fu-Hai Frank Wu	49.88	42.24	31.00
ZDBG1	Jose Zapata, Matthew Davies, Dmitry Bogdanov, Emilia Gómez	52.00	53.00	37.95
FW2	Fu-Hai Frank Wu	50.18	41.16	31.30
FW1	Fu-Hai Frank Wu	44.07	66.99	35.19
KFRO1	Maksim Khadkevich, Thomas Fillon, Gaël Richard, Maurizio Omologo	51.50	34.88	32.48
CDF2	Chris Cannam, Simon Dixon, Luis Figueira	52.88	49.62	33.66
CDF1	Chris Cannam, Simon Dixon, Luis Figueira	52.45	41.95	30.34
GP3	Geoffroy Peeters	50.32	47.02	35.17
DP1	Brian McFee, Danile P.W. Ellis	27.86	34.39	21.03
SB6	Sebastian Böck	59.04	60.15	52.44
GKC3	Aggelos Gkiokas, Vassilis Katsouros, George Carayannis	51.43	36.24	33.41
GP1	Geoffroy Peeters	49.61	55.56	36.89
SB5	Sebastian Böck	58.21	49.07	47.12
GP2	Geoffroy Peeters	50.09	49.12	36.36
ES3	Florian Eyben, Björn Schuller	45.18	37.73	27.83
ES1	Florian Eyben, Björn Schuller	40.85	43.25	29.49
EWFS1	Florian Eyben, Felix Weninger, Giacomo Ferroni, Björn Schuller	26.22	26.17	21.75
FK1	Florian Krebs	57.68	52.86	41.56

Structural Segmentation - MIREX '09

SubID	Participants	MIREX 09 F-measure	MIREX 10 RWC/Quaero SB@3sec	MIREX 10 RWC/RWC F-measure	Salami F-measure
RBH3	Bruno Rocha, Niels Bogaards, Aline Honingh	0.47	0.54	0.48	0.49
RBH2	Bruno Rocha, Niels Bogaards, Aline Honingh	0.46	0.67	0.48	0.47
RBH1	Bruno Rocha, Niels Bogaards, Aline Honingh	0.46	0.67	0.47	0.47
MP1	Brian McFee, Danile P.W. Ellis	0.47	0.57	0.42	0.40
RBH4	Bruno Rocha, Niels Bogaards, Aline Honingh	0.47	0.54	0.48	0.47
MP2	Brian McFee, Danile P.W. Ellis	0.46	0.59	0.42	0.37
CF5	Chris Cannam, Luis Figueira	0.51	0.61	0.52	0.45
CF6	Chris Cannam, Luis Figueira, Matthias Mauch	0.61	0.49	0.58	0.55

Special Thanks to: The Andrew W. Mellon Foundation, the National Science Foundation (Grant No. NSF IIS-0327371 and No. NSF IIS-0328471), IMIRSEL members (C. Maden, K. Choi, Y. Hao, R. Aktar, J. Downie, A. Ehmann, M. Bay, P. Organisciak, & C. Willis), the content providers, Evalutron graders, the MIR community, and the ISMIR 2013 organizing committee

Audio Chord Esitimation - MirexChord2009

SubID	Participants	Root	MajMin	MajMin Bass	Sevenths	Sevenths Bass	Mean directional Hamming measure	Mean under-segmentation	Mean over-segmentation
CB3	Taemin Cho, Juan P. Bello	84.47	81.78	79.12	68.95	66.46	0.85	0.13	0.08
CB4	Taemin Cho, Juan P. Bello	83.74	82.19	79.39	68.72	66.21	0.84	0.14	0.08
CF2	Chris Cannam, Luis Figueira	78.56	75.41	72.48	54.67	52.26	0.82	0.13	0.14
KO1	Maksim Khadkevich, Maurizio Omologo	82.93	82.19	79.61	76.04	73.43	0.84	0.14	0.09
KO2	Maksim Khadkevich, Maurizio Omologo	84.26	83.95	81.38	80.17	77.38	0.86	0.13	0.08
NG1	Nikolay Glazyrin	77.19	75.28	72.44	65.70	63.14	0.79	0.18	0.12
NG2	Nikolay Glazyrin	72.84	70.93	68.12	43.00	41.35	0.79	0.17	0.16
NMSD1	Yizhao Ni, Matt Mcvicar, Raul Santos-Rodriguez, Tijl De Bie	82.53	80.72	78.14	66.08	63.77	0.83	0.15	0.10
NMSD2	Yizhao Ni, Matt Mcvicar, Raul Santos-Rodriguez, Tijl De Bie	83.00	81.49	78.66	68.84	66.21	0.83	0.14	0.10
PP3	Johan Pauwels, Geoffroy Peeters	76.67	75.14	72.09	66.51	63.72	0.81	0.16	0.12
PP4	Johan Pauwels, Geoffroy Peeters	75.32	72.81	69.92	61.02	58.29	0.80	0.18	0.11
SB8	Nikolaas Steenbergen, John Ashley Burgoyne	9.37	7.47	7.06	6.60	6.22	0.40	0.08	0.60

Audio Chord Esitimation - BillboardTest2012

SubID	Participants	Root	MajMin	MajMin Bass	Sevenths	Sevenths Bass	Mean directional Hamming measure	Mean under-segmentation	Mean over-segmentation
CB3	Taemin Cho, Juan P. Bello	78.72	76.75	74.72	65.17	63.11	0.81	0.16	0.11
CF2	Chris Cannam, Luis Figueira	74.08	72.22	70.21	55.35	53.39	0.80	0.15	0.17
KO1	Maksim Khadkevich, Maurizio Omologo	77.38	75.58	73.51	57.68	55.82	0.80	0.17	0.13
KO2	Maksim Khadkevich, Maurizio Omologo	77.81	76.25	74.33	62.18	60.24	0.80	0.18	0.11
NG1	Nikolay Glazyrin	72.68	71.22	68.97	51.70	49.80	0.79	0.18	0.14
NG2	Nikolay Glazyrin	68.67	67.09	64.99	48.32	46.75	0.78	0.17	0.17
NMSD1	Yizhao Ni, Matt Mcvicar, Raul Santos-Rodriguez, Tijl De Bie	77.70	76.10	74.22	64.18	62.28	0.79	0.18	0.14
NMSD2	Yizhao Ni, Matt Mcvicar, Raul Santos-Rodriguez, Tijl De Bie	77.32	76.26	74.38	64.70	62.64	0.78	0.18	0.14
PP3	Johan Pauwels, Geoffroy Peeters	74.00	72.77	70.44	52.72	50.77	0.79	0.16	0.16
PP4	Johan Pauwels, Geoffroy Peeters	72.66	70.39	68.14	54.72	52.61	0.79	0.18	0.13
SB8	Nikolaas Steenbergen, John Ashley Burgoyne	8.52	6.35	6.15	4.81	4.73	0.36	0.08	0.64

Audio Chord Esitimation - BillboardTest2013

SubID	Participants	Root	MajMin	MajMin Bass	Sevenths	Sevenths Bass	Mean directional Hamming measure	Mean under-segmentation	Mean over-segmentation
CB3	Taemin Cho, Juan P. Bello	75.75	72.14	70.07	58.13	56.16	0.78	0.19	0.11
CF2	Chris Cannam, Luis Figueira	71.05	67.40	65.33	49.06	47.25	0.77	0.17	0.17
NG1	Nikolay Glazyrin	70.87	67.08	64.76	48.70	46.63	0.75	0.21	0.14
NG2	Nikolay Glazyrin	67.05	63.11	61.08	43.78	42.74	0.75	0.19	0.17
NMSD1	Yizhao Ni, Matt Mcvicar, Raul Santos-Rodriguez, Tijl De Bie	74.50	71.29	69.20	58.51	56.56	0.76	0.21	0.14
NMSD2	Yizhao Ni, Matt Mcvicar, Raul Santos-Rodriguez, Tijl De Bie	74.62	71.54	69.47	59.46	57.53	0.75	0.21	0.14
PP3	Johan Pauwels, Geoffroy Peeters	70.52	67.97	65.58	50.48	48.39	0.76	0.18	0.16
PP4	Johan Pauwels, Geoffroy Peeters	69.59	66.26	63.94	51.62	49.61	0.75	0.22	0.13
SB8	Nikolaas Steenbergen, John Ashley Burgoyne	9.12	6.61	6.44	5.25	5.11	0.35	0.08	0.65