

ISMIR 2005

**Sixth
International
Conference on
Music
Information
Retrieval**

PROGRAMME

Queen Mary, University of London &
Goldsmiths' College, University of London

11th–15th September, 2005



Queen Mary,
University of London
Mile End Road,
London E1 4NS



Goldsmiths' College,
University of London
New Cross,
London SE14 6NW

Sixth International Conference on
Music Information Retrieval (ISMIR 2005)

Queen Mary, University of London &
Goldsmiths' College, University of London
11th–15th September, 2005

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ORGANISERS

General Chairs

Tim Crawford (Goldsmiths' College, University of London)
Mark Sandler (Queen Mary, University of London)

Local committee

Juan Bello (Queen Mary, University of London)
Michael Casey (Goldsmiths' College, University of London)
Tim Crawford (Goldsmiths' College, University of London)
J. Stephen Downie (University of Illinois at Urbana-Champaign)
Jeremy Pickens (King's College London, UK)
Mark Plumbley (Queen Mary, University of London)
Josh Reiss (Queen Mary, University of London)
Mark Sandler (Queen Mary, University of London)
Emmanuel Vincent (Queen Mary, University of London)
Geraint Wiggins (Goldsmiths' College, University of London)

Steering committee

David Bainbridge (University of Waikato, New Zealand)
Donald Byrd (Indiana University, USA)
Tim Crawford (Goldsmiths' College, University of London)
J. Stephen Downie (University of Illinois at Urbana-Champaign)
Jon Dunn (Indiana University, USA)
Michael Fingerhut (IRCAM — Centre Pompidou, Paris, France)
Ichiro Fujinaga (McGill University, Montréal, Canada)
Holger Hoos (University of British Columbia, Canada)
Kjell Lemström (University of Helsinki, Finland)
Connie Mayer (Harvard University, USA)

Local support team

Samer Abdallah, Nicolas Chetry, Matthew Davies, Christopher Harte, Christian Landone, Mark Levy, Andrew Nesbit and Katy Noland (Queen Mary, University of London); Ollie Bown, David Meredith and Christophe Rhodes (Goldsmiths' College, University of London).

GENERAL INFORMATION

REGISTRATION

The registration and information desk will be in the foyer of the People's Palace at the Queen Mary Mile End campus. Registration times are:

Monday 12th September, 08:00–09:00;

Tuesday 13th September, 08:20–09:00;

Wednesday 14th September, 08:20–09:00.

The information desk will be open from 09:00 to 18:00 from Monday to Thursday.

Attendees are requested to wear their badges at all times, including social events. Organisers' badges will be coloured while attendees' badges will be white.

A limited number of extra copies of the printed proceedings will be available at the registration desk.

There will be a message board in the foyer of the People's Palace.

INTERNET ACCESS

Internet access is available via the iMacs to be found in the foyer of the People's Palace. Wireless internet access is available in the foyer of the People's Palace and adjoining foyer of the Engineering Building. The network name is `e1ec_eng_wlan`; please login using your e-mail address as password.

LUNCHEAS AND BREAKS

Lunch will take place in the Great Hall in the People's Palace, between 12:40 and 14:20 on Monday, Tuesday and Wednesday. Coffee breaks will also take place in the Great Hall at the times shown on the timetable on page 14.

INFORMATION FOR PRESENTERS

ORAL PRESENTATIONS

Oral presentations will be allocated a strict 20 minute presentation time, including time for questions.

Presenters should contact their session chair well before the start of the session, and are requested to test all aspects of their presentations in the half-hour before the session at the latest.

For those bringing their presentation on CDR or USB stick, laptops with USB audio devices will be provided, preinstalled with Acrobat Reader, Open Office, and Powerpoint. (Note that embedded objects in Powerpoint presentations can sometimes cause problems so these should be tested before the session.) Alternatively, presentations can be e-mailed to Christopher Harte (christopher.harte@elec.qmul.ac.uk) or Katy Noland (katy.noland@elec.qmul.ac.uk) well before the session.

Audio connections are available via 3.5 mm stereo minijack, paired ¼ in jacks or paired RCA phono connectors.

The data projector resolution is 1024×768, and has a standard VGA 15 pin D connector. Spare video adapter cables are available for newer Apple laptops.

There will be no over-head projector (OHP) for transparencies.

Internet access is available in the Skeel lecture theatre, but NOT IN PP2, where two of the parallel sessions (*Audio to score* and *Alignment and retrieval*), are being held.

POSTER PRESENTATIONS

Poster sessions will be held on Monday 12th, Tuesday 13th and Wednesday 14th September from 12:40 pm to 2:20 pm in the Great Hall in the Peoples' Palace. The session on Wednesday 14th September will be devoted to MIREX-related posters. Each poster will be on display at only one of these three sessions.

Each poster has to fit on a poster board that is 3 feet (91.4 cm) wide and 6 feet (182.9 cm) tall. However, posters should not reach down to the floor as this makes them hard to read. Posters should therefore be no more than 85 cm (33.5 in) wide and no more than 119 cm (46.9 in) tall (i.e., no larger than A0 portrait or A1 landscape).

IMPORTANT: Posters wider than the stated dimensions will not fit on the poster boards and cannot be displayed. A0 landscape is **TOO WIDE**.

Authors are responsible for putting up and taking down their own posters. On the day on which your poster will be displayed, take your poster to the Great Hall between 8:30 am and 12:15 pm, find the poster board which is labelled with your name and poster title and put your poster up using the velcro tabs which will be provided. You must then remove your poster by 6:30 pm on the same day.

If you would like to present a demonstration in association with your poster, please inform David Meredith (dave@titanmusic.com) as soon as possible, so that we can ensure that there will be sufficient tables, power points, etc. Demo space is strictly limited and will be allocated on a first-come, first-served basis.

Wired internet connections for up to 8 machines will be available in the Great Hall during the poster presentations.

TUTORIALS

13:30–15:30, Sunday 11th September

Tutorial 1 — Music Background

(Lecture Theatre, Ben Pimlott Building, Goldsmiths' College)

Designed for professionals and non-specialists, the first part of this tutorial will present an analysis of the Fifth Symphony by Beethoven, revealing as many aspects as possible, appropriate for professional musicians and amateurs at the same time. The second part will consist of a detailed look at work on measuring the performance characteristics of musicians using new technologies.

Part I — The combination of musicology, engineering, and interpretation in Beethoven's 5th symphony

Dalia Atlas (Technion, Haifa, Israel)

Part II — Looking Beyond the Notes: An Engineering Approach to the Study of Musical Performance

Elaine Chew (Integrated Media Systems Center, University of Southern California)

16:00–18:00, Sunday 11th September

Tutorial 2 — Music Similarity and Visualization for Music IR

(Lecture Theatre, Ben Pimlott Building, Goldsmiths' College)

The first part of this tutorial is an introduction to the computation of audio and web-based music similarity. We will cover low-level audio statistics related to timbre and rhythm as well as the application of text information retrieval techniques to MIR. We illustrate the use of these techniques for playlist generation and genre classification. The second part of the tutorial will look at 2D methods, 3D methods, data mining visualization, animation and interfaces for inspecting and navigating the music information based on the similarity computations.

Part I — Music Similarity

Elias Pampalk (ÖFAI — Austrian Research Institute for AI)

Part II — Visualization Methods for MIR

Stephan Baumann (DFKI GmbH — German Research Center for AI)

INVITED TALKS

09:20–10:00, Monday 12th September

Invited talk — Towards the Complete Musicologist?

(Skeel lecture theatre, People's Palace)

Nicholas Cook, FBA (Research Professor of Music, Royal Holloway, University of London)

Only a decade ago, the idea of the computer being the musicologist's workbench seemed futuristic if not downright impractical, at least outside the specialist circle of computational musicologists. In many ways it is now a reality: we use our computers both to conduct our research (through searching online databases, accessing facsimiles, or sound analysis) and to present our results (by means of text, notation, and sound or video clips). Yet the potential of computational approaches to change the way we think about music remains for the most part unrealized. In this paper I explore what these changes might be, whether they are desirable, how they might be brought about, and what are the factors that militate against them.

09:00–09:40, Wednesday 14th September

Keynote address — Text and non-text: the ascendancy of words

(Skeel lecture theatre, People's Palace)

Stephen Robertson (Professor of Information Systems, Dept. of Information Science, City University, London)

The current archetype of a search system is the web search engine, with a free-text entry box for the query. Items are indexed with words (or something very like words); queries are split into words; and the words are matched. All the sophistication lies in the logic and statistics of matching and ranking. So what do we do with non-verbal media? Primarily we turn it into words! In this talk I will discuss the all-pervasive, all-conquering nature of this paradigm, review some of its methods and effects, and consider the question of how locked into it we really are.

17:40–18:20, Wednesday 14th September

Invited talk — Sonification

(Skeel lecture theatre, People's Palace)

Thomas Dolby (Headspace, Inc.)

Sonification is the use of non-speech audio to convey information. By mapping real-world data to auditory signals, it is possible to provide a fresh perspective or 'view' of something we take for granted. Thomas' presentation covers recent work he has produced in conjunction with computer graphics company Alias/Wavefront, in which he sonifies a range of subjects including water droplets, seasonal rainfall, solar flares, and the Asian tsunami. He will step us through the process, explain the techniques used, and play us the results in real time.

PANELS

14:20–16:20, Monday 12th September

Panel discussion — Professional Users of MIR

(Skeel lecture theatre, People's Palace)

Chair: Tim Crawford (Goldsmiths' College, University of London)

Panellists:

- Dalia Atlas (Technion, Haifa, Israel),
- Chris Banks (Head of Music Collections, British Library),
- Nicholas Cook, FBA (Research Professor of Music, Royal Holloway, University of London),
- Eric Isaacson (Indiana University),
- Francis Rumsey (Surrey University).

Music Information Retrieval has witnessed a steady increase in interest from 'professional' users, both actual and — much more often — potential. While there are many unresolved issues in the mapping of the high-level, 'musical', descriptions of tasks to low-level MIR queries, work in this crucial area is likely to form the basis for much research which will be reported at future ISMIRs. This panel brings together a number of those whose work is likely to be much affected by MIR technology, under the chairmanship of one whose work straddles both domains. All are distinguished and very experienced in their fields, and this will provide an opportunity for each of the panellists to give a brief account of their experiences, their hopes and dreams for, and their disappointments and frustrations in the domain of our fledging discipline. It will also be a chance for MIR researchers to engage in discussion from the floor with a group of well-informed professional 'clients' whose interests are mainly in the music rather than the technology.

14:20–16:20, Tuesday 13th September

Panel discussion — Creative Applications of MIR

(Skeel lecture theatre, People’s Palace)

Chair: Michael Casey (Goldsmiths’ College, University of London)

Panellists:

Nick Collins (Cambridge University),
Adam Lindsay (Lancaster University),
François Pachet (Sony CSL-Paris),
Martyn Ware (Illustrious Company).

How are music information retrieval tools being adopted by music creators? What MIR tools will composers and producers use in the future? This panel will consider generative music systems and music performance systems that employ music information retrieval tools and will consider new research areas for MIR in the context of musical creativity. The panel will explore these themes from the perspective of the music industry, music technology research and live musical performance with computers.

14:20–16:20, Wednesday 14th September

Panel discussion — MIREX Panel

(Skeel lecture theatre, People’s Palace)

Chair: J. Stephen Downie (University of Illinois at Urbana-Champaign)

Panellists:

Andreas Ehmann (University of Illinois at Urbana-Champaign),
Daniel P. W. Ellis (Columbia University),
Emmanuel Vincent (Queen Mary, University of London),
Kris West (University of East Anglia).

MIREX 2005 is the second large scale evaluation of state-of-the-art algorithms related to MIR. It involves sixty algorithms addressing ten tasks proposed by the participants. The first half of this panel will feature a presentation and a short discussion of testing data, performance measures and evaluation results for each task. The second half will be dedicated to issues concerning the organization of future MIREXes, such as the development of the M2K (Music-to-Knowledge) computing framework and web interface, the collection of larger databases and the evaluation of new tasks.

	Sun 11 Sept	Mon 12 Sept	Tue 13 Sept	Wed 14 Sept	Thu 15 Sept
8:00-8:20		Registration			
8:20-9:00			Registration	Registration	
9:00-9:20		Welcome	Paper session MIR systems	Keynote Stephen Robertson	Paper session Rhythmic and structural analysis
9:20-9:40	Invited speaker Nicholas Cook				
9:40-10:00				Paper session Music similarity	
10:00-10:20		Paper session MIR general			
10:20-10:40					
10:40-11:00		Break	Break	Break	Break
11:00-11:20		Paper session Music classification	Paper session Motivic and melodic analysis and retrieval	Paper session Harmonic- based analysis and retrieval	Paper session User interfaces, visualisation and interaction
11:20-11:40					
11:40-12:00					
12:00-12:20	Lunch (not provided)				
12:20-12:40					
12:40-1:30		Lunch & posters	Lunch & posters	Lunch & posters (inc. MIREX posters)	ISMIR 2005 ends
1:30-2:00	Tutorial 1:				
2:00-2:20	Music Background				
2:20-2:40	(at Goldsmiths')	Panel Professional users of MIR	Panel Creative Applications of MIR	Panel MIREX Contest Panel	
2:40-3:00					
3:00-3:20					
3:20-3:30					
3:30-4:00	Break				
4:00-4:20	Tutorial 2:	Break	Break	Break	
4:20-4:40	Music Similarity and Visualization for Music IR (at Goldsmiths')	Parallel sessions Annotation of musical data (Skeel) and Audio to score (PP2)	Parallel sessions Optimised methods (Skeel) and Alignment and retrieval (PP2)	Paper session Voice/instr. analysis, classification and segregation	
4:40-5:00					
5:00-5:20					
5:20-5:40				Invited speaker Thomas Dolby	
5:40-6:00					
...					
6:30			Reception at British Library		
...					
8:00-		Concert at The Spitz		Banquet at Bank Westminster	

ORAL PRESENTATIONS

MONDAY 12TH SEPTEMBER

09:00–09:20, Monday 12th September

Opening remarks

(Skeel lecture theatre, People's Palace)

09:20–10:00, Monday 12th September

Invited talk — Towards the Complete Musicologist?

(Skeel lecture theatre, People's Palace)

Nicholas Cook, FBA (Research Professor of Music, Royal Holloway, University of London)

10:00–10:40, Monday 12th September

Session — MIR general

(Skeel lecture theatre, People's Palace)

Chair: George Tzanetakis (University of Victoria, Canada)

J. H. Lee, J. S. Downie & S. J. Cunningham · **Challenges in Cross-Cultural/Multilingual Music Information Seeking.** 1

Cynthia M. Grund · **Music Information Retrieval, Memory and Culture: Some Philosophical Remarks.** 8

11:00–12:40, Monday 12th September

Session — Music classification

(Skeel lecture theatre, People's Palace)

Chair: Daniel P. W. Ellis (Columbia University)

Noris Mohd Norowi, Shyamala C. Doraisamy & Rahmita Wirza O.K. Rahmat · **Factors Affecting Automatic Genre Classification: An Investigation Incorporating Non-Western Musical Forms.** 13

Markus Schedl, Peter Knees & Gerhard Widmer · **Discovering and Visualizing Prototypical Artists by Web-Based Co-Occurrence Analysis.** 21

Ian Knopke · **Geospatial Location of Music and Sound Files for Music Information Retrieval.** 29

Thomas Lidy & Andreas Rauber · **Evaluation of Feature Extractors and Psycho-Acoustic Transformations for Music Genre Classification.** 34

Cory McKay, Rebecca Fiebrink, Daniel McEnnis, Beinan Li & Ichiro Fujinaga · **ACE: A Framework for Optimizing Music Classification.** 42

12:40–14:20, Monday 12th September

Lunch and Poster session

(Great Hall, People's Palace)

14:20–16:20, Monday 12th September

Panel discussion — Professional Users of MIR

(Skeel lecture theatre, People's Palace)

Chair: Tim Crawford (Goldsmiths' College, University of London)

16:20–18:00, Monday 12th September

Session — Annotation of musical data

(Skeel lecture theatre, People's Palace)

Chair: Geraint Wiggins (Goldsmiths' College, University of London)

Koen Tanghe, Micheline Lesaffre, Sven Degroeve, Marc Leman, Bernard De Baets & Jean-Pierre Martens · **Collecting Ground Truth Annotations for Drum Detection in Polyphonic Music.** 50

Gavin Wood & Simon O'Keefe · **On Techniques for Content-Based Visual Annotation to Aid Intra-Track Music Navigation.** 58

Christopher Harte, Mark Sandler, Samer Abdallah & Emilia Gómez · **Symbolic Representation of Musical Chords: A Proposed Syntax for Text Annotations.** 66

Mika Kuuskankare & Mikael Laurson · **Annotating Musical Scores in ENP.** 72

Perfecto Herrera, Òscar Celma, Jordi Massaguer, Pedro Cano, Emilia Gómez, Fabien Gouyon & Markus Koppenberger · **MUCOSA: A Music Content Semantic Annotator.** 77

16:20–18:00, Monday 12th September

Session — Audio to score

(PP2, People’s Palace)

Chair: Masataka Goto (AIST, Japan)

Shoichiro Saito, Hirokazu Kameoka, Takuya Nishimoto & Shigeki Sagayama · **Specmurt Analysis of Multi-Pitch Music Signals with Adaptive Estimation of Common Harmonic Structure.** 84

Olivier Gillet & Gaël Richard · **Drum Track Transcription of Polyphonic Music Using Noise Subspace Projection.** 92

Nick Collins · **Using a Pitch Detector for Onset Detection.** 100

Parag Chordia · **Segmentation and Recognition of Tabla Strokes.** 107

Hirokazu Kameoka, Takuya Nishimoto & Shigeki Sagayama · **Harmonic-Temporal Clustering via Deterministic Annealing EM Algorithm for Audio Feature Extraction.** 115

TUESDAY 13TH SEPTEMBER

09:00–10:40, Tuesday 13th September

Session — MIR systems

(Skeel lecture theatre, People’s Palace)

Chair: Jon Dunn (Indiana University, USA)

Jenn Riley · **Exploiting Musical Connections: A Proposal for Support of Work Relationships in a Digital Music Library.** 123

Ajay Kapur, Richard I. McWalter & George Tzanetakis · **New Music Interfaces for Rhythm-Based Retrieval.** 130

Ioannis Karydis, Alexandros Nanopoulos, Apostolos Papadopoulos, Dimitrios Katsaros & Yannis Manolopoulos · **Content-Based Music Information Retrieval in Wireless Ad-Hoc Networks.** 137

Eric Isaacson · **What You See Is What You Get: on Visualizing Music.** 389

Rainer Typke, Frans Wiering & Remco C. Veltkamp · **A Survey of Music Information Retrieval Systems.** 153

11:00–12:40, Tuesday 13th September

Session — Motivic and melodic analysis and retrieval

(Skeel lecture theatre, People's Palace)

Chair: Frans Wiering (Utrecht University, The Netherlands)

Graham E. Poliner & Daniel P. W. Ellis · **A Classification Approach to Melody Transcription.** 161

Emilios Cambouropoulos, Maxime Crochemore, Costas S. Iliopoulos, Manal Mohamed & Marie-France Sagot · **A Pattern Extraction Algorithm for Abstract Melodic Representations that Allow Partial Overlapping of Intervallic Categories.** 167

Rui Pedro Paiva · **On the Detection of Melody Notes in Polyphonic Audio.** 175

Wei-Ho Tsai, Hung-Ming Yu & Hsin-Min Wang · **A Query-By-Example Technique for Retrieving Cover Versions of Popular Songs with Similar Melodies.** 183

Olivier Lartillot · **Efficient Extraction of Closed Motivic Patterns in Multi-Dimensional Symbolic Representations of Music.** 191

12:40–14:20, Tuesday 13th September

Lunch and Poster session

(Great Hall, People's Palace)

14:20–16:20, Tuesday 13th September

Panel discussion — Creative Applications of MIR

(Skeel lecture theatre, People's Palace)

Chair: Michael Casey (Goldsmiths' College, University of London)

16:20–15:40, Tuesday 13th September

Session — Alignment and retrieval

(PP2, People’s Palace)

Chair: Elaine Chew (Integrated Media Systems Center, University of Southern California)

Norman Adams, Daniela Marquez & Gregory Wakefield · **Iterative Deepening for Melody Alignment and Retrieval.** 199

Jeremy Pickens & Costas Iliopoulos · **Markov Random Fields and Maximum Entropy Modeling for Music Information Retrieval.** 207

Bryan Pardo & Manan Sanghi · **Polyphonic Musical Sequence Alignment for Database Search.** 215

Ning Hu & Roger B. Dannenberg · **A Bootstrap Method for Training an Accurate Audio Segmenter.** 223

16:20–15:40, Tuesday 13th September

Session — Optimised and efficient methods

(Skeel lecture theatre, People’s Palace)

Chair: Michael Casey (Goldsmiths’ College, University of London)

Pierre Roy, Jean-Julien Aucouturier, François Pachet & Anthony Beurivé · **Exploiting the Tradeoff Between Precision and Cpu-Time to Speed Up Nearest Neighbor Search.** 230

Nancy Bertin, Alain de Cheveigné · **Scalable Metadata and Quick Retrieval of Audio Signals.** 238

Charles Parker · **Applications of Binary Classification and Adaptive Boosting to the Query-By-Humming Problem.** 245

Ming Li & Ronan Sleep · **Genre Classification via an LZ78-Based String Kernel.** 252

WEDNESDAY 14TH SEPTEMBER

09:00–09:40, Wednesday 14th September

Keynote address — Text and non-text: the ascendancy of words

(Skeel lecture theatre, People's Palace)

Stephen Robertson (Professor of Information Systems, Dept. of Information Science, City University, London)

09:40–10:40, Wednesday 14th September

Session — Music similarity

(Skeel lecture theatre, People's Palace)

Chair: Beth Logan (Hewlett Packard)

Arthur Flexer, Elias Pampalk & Gerhard Widmer · **Novelty Detection Based on Spectral Similarity of Songs.** 260

Richard Stenzel & Thomas Kamps · **Improving Content-Based Similarity Measures by Training a Collaborative Model.** 264

Fabio Vignoli & Steffen Pauws · **A Music Retrieval System Based on User Driven Similarity and Its Evaluation.** 272

11:00–12:40, Wednesday 14th September

Session — Harmonic-based analysis and retrieval

(Skeel lecture theatre, People's Palace)

Chair: Roger Dannenberg (Carnegie Mellon University, USA)

David Meredith & Geraint Wiggins · **Comparing Pitch Spelling Algorithms.** 280

Meinard Mueller, Frank Kurth & Michael Clausen · **Audio Matching via Chroma-Based Statistical Features.** 288

Ching-Hua Chuan & Elaine Chew · **Fuzzy Analysis in Pitch-Class Determination for Polyphonic Audio Key Finding.** 296

Juan P. Bello & Jeremy Pickens · **A Robust Mid-Level Representation for Harmonic Content in Music Signals.** 304

Jean-François Paiement, Douglas Eck & Samy Bengio · **A Probabilistic Model for Chord Progressions.** 312

12:40–14:20, Wednesday 14th September

Lunch and Poster session (including MIREX posters)

(Great Hall, People’s Palace)

14:20–16:20, Wednesday 14th September

Panel discussion — MIREX Panel

(Skeel lecture theatre, People’s Palace)

Chair: J. Stephen Downie (University of Illinois at Urbana-Champaign)

16:20–17:40, Wednesday 14th September

Session — Voice/instrument analysis, classification and segregation

(Skeel lecture theatre, People’s Palace)

Chair: Ichiro Fujinaga (McGill University, Montréal, Canada)

Slim Essid, Gaël Richard & Bertrand David · **Inferring Efficient Hierarchical Taxonomies for MIR Tasks: Application to Musical Instruments.** 324

Hiromasa Fujihara, Tetsuro Kitahara, Masataka Goto, Kazunori Komatani, Tetsuya Ogata & Hiroshi G. Okuno · **Singer Identification Based on Accompaniment Sound Reduction and Reliable Frame Selection.** 329

Shankar Vembu & Stephan Baumann · **Separation of Vocals from Polyphonic Audio Recordings.** 337

Norman Casagrande, Douglas Eck & Balázs Kégl · **Frame-Level Audio Feature Extraction Using AdaBoost.** 345

17:40–18:20, Wednesday 14th September

Invited talk — Sonification

(Skeel lecture theatre, People’s Palace)

Thomas Dolby (Headspace, Inc.)

THURSDAY 15TH SEPTEMBER

09:20–10:40, Thursday 15th September

Session — Rhythmic and structural analysis

(Skeel lecture theatre, People's Palace)

Chair: Mark Plumbley (Queen Mary, University of London)

Petri Toiviainen & Tuomas Eerola · **Classification of Musical Metre with Autocorrelation and Discriminant Functions.** 351

Masatoshi Hamanaka, Keiji Hirata & Satoshi Tojo · **ATTA: Automatic Time-Span Tree Analyzer Based on Extended GTTM.** 358

Roger B. Dannenberg · **Toward Automated Holistic Beat Tracking, Music Analysis and Understanding.** 366

Kristoffer Jensen, Jieping Xu & Martin Zachariassen · **Rhythm-Based Segmentation of Popular Chinese Music.** 374

11:00–12:40, Thursday 15th September

Session — User interfaces, visualisation and interaction

(Skeel lecture theatre, People's Palace)

Chair: Josh Reiss (Queen Mary, University of London)

Frank Kurth, Meinard Mueller, David Damm, Christian Fremerey, Andreas Ribbrock & Michael Clausen · **Syncplayer - An Advanced System for Multimodal Music Access.** 381

Richard Lobb, Tim Bell & David Bainbridge · **Fast Capture of Sheet Music for an Agile Digital Music Library.** 145

Fabian Mörchen, Alfred Ultsch, Mario Nöcker & Christian Stamm · **Databionic Visualization of Music Collections According to Perceptual Distance.** 396

Masataka Goto & Takayuki Goto · **Musicream: New Music Playback Interface for Streaming, Sticking, Sorting, and Recalling Musical Pieces.** 404

Jean-Julien Aucouturier & François Pachet · **Ringomatic: A Real-Time Interactive Drummer Using Constraint-Satisfaction and Drum Sound Descriptors.** 412

POSTER PRESENTATIONS

12:40–14:20, Monday 12th September

Poster session

(Great Hall, People's Palace)

Tim Bell, David Blizzard, Richard Green & David Bainbridge · **Design Of A Digital Music Stand.**

Stuart Bray & George Tzanetakis · **Distributed Audio Feature Extraction For Music.**

J. Ashley Burgoyne & Lawrence K. Saul · **Learning Harmonic Relationships In Digital Audio With Dirichlet-Based Hidden Markov Models.**

Giordano Cabral, François Pachet & Jean-Pierre Briot · **Automatic X Traditional Descriptor Extraction: The Case Of Chord Recognition.**

Òscar Celma, Miquel Ramírez, Perfecto Herrera · **Music Recommendations And Music News Filtering From User Profiles.**

Wei Chai & Barry Vercoe · **Detection Of Key Change In Classical Piano Music.**

Christophe Dalitz & Thomas Karsten · **Using The Gamera Framework For Building A Lute Tablature Recognition System.**

Sven Degroeve, Koen Tanghe, Bernard De Baets, Marc Leman and Jean-Pierre Martens · **A Simulated Annealing Optimization Of Audio Features For Drum Classification.**

P. J. O. Doets & R.L. Lagendijk · **Extracting Quality Parameters For Compressed Audio From Fingerprints.**

Douglas Eck & Norman Casagrande · **Finding Meter In Music Using An Autocorrelation Phase Matrix And Shannon Entropy.**

Rebecca Fiebrink, Cory McKay & Ichiro Fujinaga · **Combining D2K And Jgap For Efficient Feature Weighting For Classification Tasks In Music Information Retrieval.**

David Gerhard · **Pitch Track Target Deviation In Natural Singing.**

Jyh-Shing Roger Jang, Chao-Ling Hsu & Hong-Ru Lee · **Continuous HMM And Its Enhancement For Singing/Humming Query Retrieval.**

Catherine Lai, Beinan Li & Ichiro Fujinaga · **Preservation Digitization Of David Edelberg'S Handel Lp Collection: A Pilot Project.**

A.S. Lampropoulos, P.S. Lampropoulou & G.A. Tsihrintzis · **Musical Genre Classification Enhanced By Improved Source Separation Technique.**

Dominik Lübbers · **Sonixplorer: Combining Visualization And Auralization For Content-Based Exploration Of Music Collection.**

Annamaria Mesaros & Jaakko Astola · **The Mel-Frequency Cepstral Coefficients In The Context Of Singer Identification.**

Robert Neumayer, Michael Dittenbach & Andreas Rauber · **Playsom And Pocketsomplayer, Alternative Interfaces To Large Music Collections.**

Elias Pampalk, Tim Pohle & Gerhard Widmer · **Dynamic Playlist Generation Based On Skipping Behavior.**

Elias Pampalk, Arthur Flexer & Gerhard Widmer · **Improvements Of Audio-Based Music Similarity And Genre Classification.**

Aggelos Pikrakis & Sergios Theodoridis · **A Novel HMM Approach To Melody Spotting In Raw Audio Recordings.**

Robert Young Walser · **Herding Folksongs.**

Tillman Weyde & Christian Datzko · **Efficient Melody Retrieval With Motif Contour Classes.**

Wen Xue & Mark Sandler · **A Partial Searching Algorithm And Its Application For Polyphonic Music Transcription.**

Yi Yu, Chiemi Watanabe & Kazuki Joe · **Towards A Fast And Efficient Match Algorithm For Content-Based Music Retrieval On Acoustic Data.**

12:40–14:20, Tuesday 13th September

Poster session

(Great Hall, People's Palace)

Samer Abdallah, Katy Noland, Mark Sandler, Michael Casey & Christophe Rhodes · **Theory And Evaluation Of A Bayesian Music Structure Extractor.**

Xavier Amatriain, Jordi Massaguer, David Garcia & Ismael Mosquera · **The Clam Annotator: A Cross-Platform Audio Descriptors Editing Tool.**

Margaret Cahill & Donncha O Maidín · **Developing And Optimising Melodic Similarity Algorithms Using Similarity Ratings.**

Domenico Cantone, Salvatore Cristofaro & Simone Faro · **On Tuning The (δ, α) -Sequential-Sampling Algorithm For δ -Approximate Matching With Alpha-Bounded Gaps In Musical Sequences.**

Domenico Cantone, Salvatore Cristofaro & Simone Faro · **Solving The (δ, α) -Approximate Matching Problem Under Transposition Invariance In Musical Sequences.**

Sally Jo Cunningham, J. Stephen Downie & David Bainbridge · **“The Pain, The Pain”: Modelling Music Information Behavior And The Songs We Hate.**

Ruth Dhanaraj & Beth Logan · **Automatic Prediction Of Hit Songs.**

Simon Dixon & Gerhard Widmer · **Match: A Music Alignment Tool Chest.**

Rob van Gulik & Fabio Vignoli · **Visual Playlist Generation On The Artist Map.**

Peyman Heydarian & Joshua D. Reiss · **The Persian Music And The Santur Instrument.**

H. Homburg, I. Mierswa, B. Moeller, K. Morik & M. Wurst · **A Benchmark Dataset For Audio Classification And Clustering.**

Toru Hosoya, Motoyuki Suzuki, Akinori Ito & Shozo Makino · **Lyrics Recognition From A Singing Voice Based On Finite State Automaton For Music Information Retrieval.**

Xiao Hu, J. Stephen Downie, Kris West & Andreas Ehmann · **Mining Music Reviews: Promising Preliminary Results.**

Phillip B. Kirlin & Paul E. Utgoff · **Voise: Learning To Segregate Voices In Explicit And Implicit Polyphony.**

Tetsuro Kitahara, Masataka Goto, Kazunori Komatani, Tetsuya Ogata & Hiroshi G. Okuno · **Instrument Identification In Polyphonic Music: Feature Weighting With Mixed Sounds, Pitch-Dependent Timbre Modeling, And Use Of Musical Context.**

Peter Knees, Markus Schedl & Gerhard Widmer · **Multiple Lyrics Alignment: Automatic Retrieval Of Song Lyrics.**

Wei Liang, Shuwu Zhang & Bo Xu · **A Hierarchical Approach For Audio Stream Segmentation And Classification.**

Daniel McEnnis, Cory McKay, Ichiro Fujinaga & Philippe Depalle · **Feature Extraction: An Extensible Library Approach.**

Anders Meng, John Shawe-Taylor · **An Investigation Of Feature Models For Music Genre Classification Using The Support Vector Classifier.**

J.E. Muñoz-Expósito, S. Garcia-Galón, N. Ruiz-Reyes, P. Vera-Candeas and F. Rivas-Peña · **Speech/Music Discrimination Using A Single Warped LPC-Based Feature.**

Steffen Pauws & Sander van der Wijdeven · **User Evaluation Of A New Interactive Playlist Generation Concept.**

Jeremy Pickens · **Classifier Combination For Capturing Musical Variation.**

Chris Raphael · **A Graphical Model For Recognizing Sung Melodies.**

Craig Stuart Sapp · **Online Database Of Scores In The Humdrum File Format.**

Elliot Sinyor, Cory McKay, Rebecca Fiebrink, Daniel McEnnis & Ichiro Fujinaga · **Beatbox Classification Using Ace.**

Shuwu Zhang, Wei Liang & Bo Xu · **A Histogram Algorithm for Fast Audio Retrieval.**

12:40–14:20, Wednesday 14th September

Poster session (including MIREX posters)

(Great Hall, People's Palace)

Ozgur Izmirli · **Tonal Similarity From Audio Using A Template Based Attractor Model.**

Michael Mandel & Dan Ellis · **Song-Level Features And Support Vector Machines For Music Classification.**

Giovanna Neve & Nicola Orio · **Experiments On Segmentation Techniques For Indexing Of Music Documents.**

Geoffroy Peeters · **Rhythm Classification Using Spectral Templates.**

Nicolas Scaringella & Giorgio Zoia · **On The Modeling Of Time Information For Automatic Genre Recognition Systems In Audio Signals.**

Kris West & Stephen Cox · **Finding An Optimal Segmentation For Audio Genre Classification.**

MIREX COMPETITION POSTERS

Juan Jose Burred · **Audio genre classification.**

Nick Collins · **Audio onset detection.**

J. Stephen Downie, Kris West, Andreas Ehmann and Emmanuel Vincent · **The 2005 Music Information Retrieval Evaluation Exchange (MIREX 2005): Preliminary Overview.**

Karin Dressler · **Audio melody extraction.**

Masataka Goto · **Audio melody extraction.**

Fabien Gouyon, Emilia Gomez and Simon Dixon · **Audio key finding, audio tempo extraction.**

Beth Logan · **Audio artist identification.**

Matija Marolt · **Audio melody extraction.**

Cory McKay and Ichiro Fujinaga · **Symbolic Genre Classification Using the Bodhidharma System.**

Daniel Muellensiefen and Klaus Frieler · **Symbolic melodic similarity.**

Antonio Pertusa, David Rizo, Pedro J. Ponce de León, Anssi Klapuri and José M. Iñesta · **Audio onset detection, symbolic key finding, symbolic genre classification.**

Matti Rynnänen, Anssi Klapuri and Jouni Paulus · **Audio melody extraction, audio drum detection.**

Vitor Soares · **Audio genre classification, audio artist identification.**

Rainer Typke, Frans Wiering, Remco C. Veltkamp · **A robust transportation-based measure for melodic similarity.**

George Tzanetakis, Jennifer Murdoch, Stuart Bray, Ajay Kapur and Richard McWalter · **Audio tempo extraction, audio genre classification, audio artist identification.**

Kazuyoshi Yoshii, Masataka Goto and Hiroshi G. Okuno · **Audio drum detection.**

SOCIAL PROGRAMME

Note: attendees are requested to wear their badges at all social events.

20:00, Monday 12th September

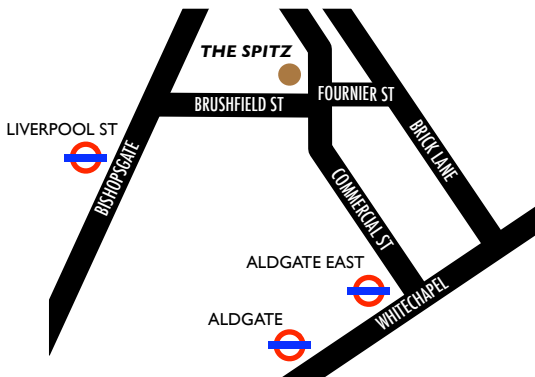
Concert

(The Spitz, 109 Commercial Street, Old Spitalfields Market, London E1 6BG)

The ISMIR 2005 concert will be a jazz/rap performance given by the saxophonist/singer/composer Soweto Kinch and his quintet.

Soweto Kinch Quintet

- Soweto Kinch · alto sax/rap/vocals
- Abram Wilson · trumpet/vocals
- Femi Temowo · guitar
- Neil Charles · double bass
- Troy Miller · drums



The Spitz, 109 Commercial Street, Old Spitalfields Market, London E1 6BG, tel: 020 7392 9032. *Nearest tubes:* Liverpool Street (Central, District, Circle, and Metropolitan lines) and Aldgate East (Circle and District lines).

From Queen Mary (Mile End campus): Walk to Stepney Green Underground Station. Take the District or Hammersmith & City Line to Aldgate East. Walk up Commercial Street for about 10 mins. The Spitz is on the left. (30 min)

18:30–21:00, Tuesday 13th September

Reception

(British Library, St. Pancras, 96 Euston Road, London NW1 2DB)

The ISMIR 2005 reception is hosted by the Music Department of the British Library at St Pancras. ISMIR 2005 delegates will be welcomed to the Library by the Head of Music Collections, Chris Banks, and by the National Sound Archive's Curator of Western Art Music, Tim Day. They and their colleagues will be available to discuss the collections, the technical resources of the Library, and some of the exciting music-related projects which are taking place there.

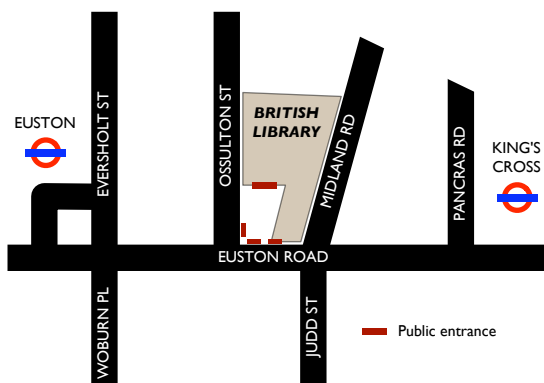
18:30–18:40 **Welcome**

18:40–18:50 **Introduction to BL Music Collections**

18:50–19:05 **Introduction to BL Sound Archive**

19:05–20:00 **Galleries open**

21:00 **Building closes**



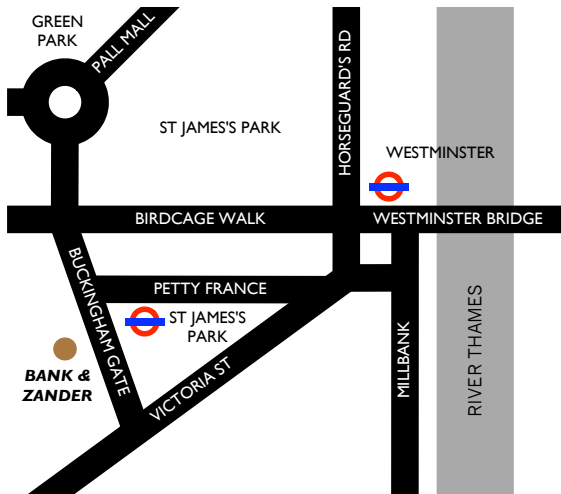
British Library, St. Pancras, 96 Euston Road, London NW1 2DB. *Nearest tubes:* King's Cross (Circle, Hammersmith & City, Metropolitan, Northern, Piccadilly, and Victoria lines) and Euston (Northern and Victoria lines).

From Queen Mary (Mile End campus): Walk to Stepney Green Underground Station. Take the Hammersmith & City Line to King's Cross St Pancras (if no Hammersmith & City Line train is shown on the display board, take the first District Line train and change at Aldgate East). Exit King's Cross St Pancras towards Euston Road (North Side). Turn right and walk along Euston Road, past the major building works at St Pancras Station, to reach the British Library. **(40 min)**

20:00, Wednesday 14th September

Banquet

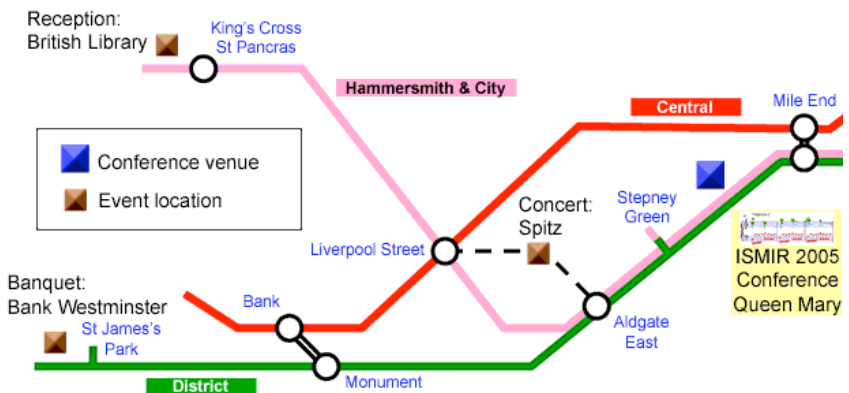
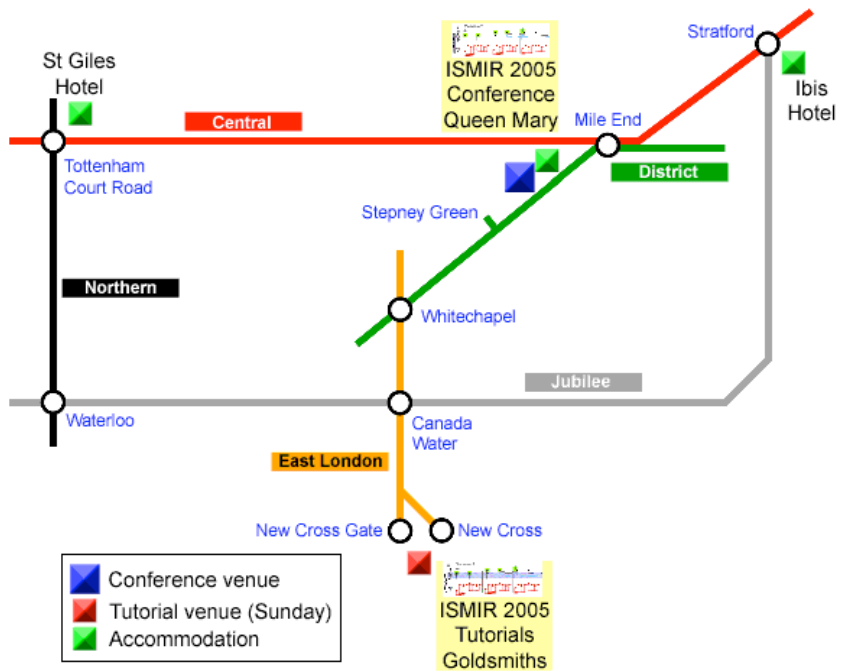
(Bank Westminster, 45 Buckingham Gate, London SW1E 6BS)

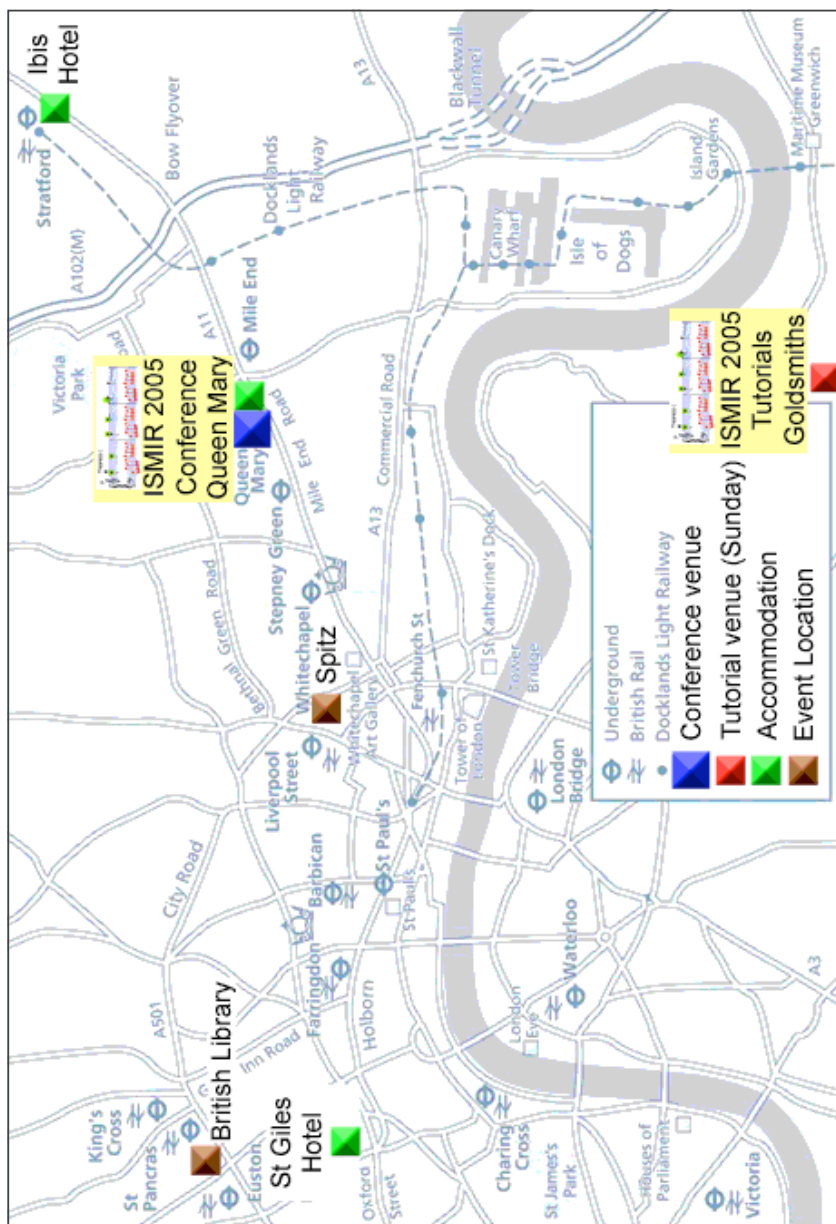


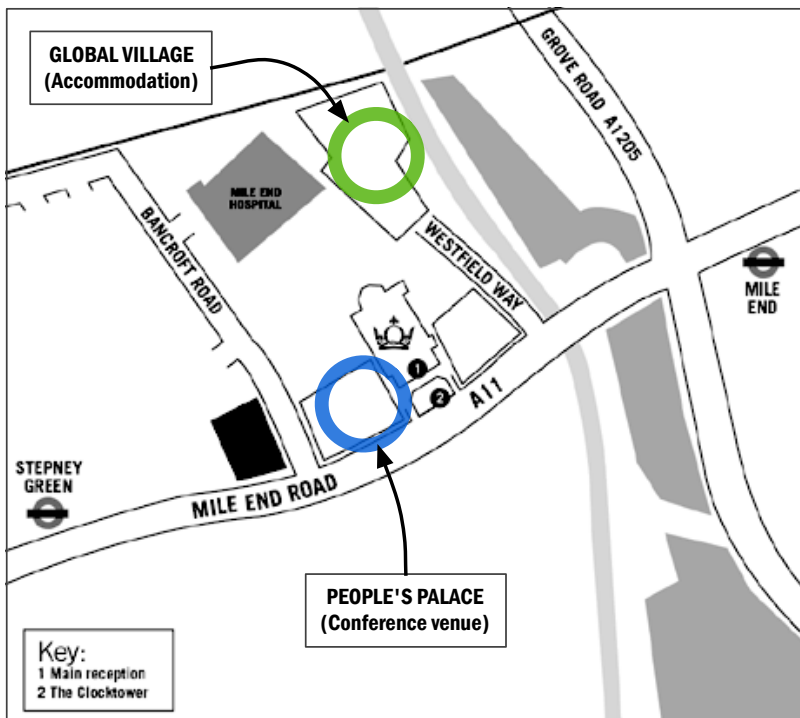
Bank Westminster,
45 Buckingham Gate,
London SW1E 6BS, tel:
020 7379 9797. Nearest
tube: St. James's Park
(Circle and District lines).

From Queen Mary (Mile End campus): Walk to Stepney Green Underground Station. Take the District Line to St James's Park. Take the Petty France exit, turn left and walk until you reach Buckingham Gate. Turn left again and Bank Westminster is one minute walk down Buckingham Gate on your right. **(40 min)**

LOCATIONS AND TRANSPORT







Queen Mary (Mile End campus), Mile End Road, London E1 4NS. Nearest tubes: Mile End (Hammersmith & City and Central lines) and Stepney Green (District and Hammersmith & City lines).

Global Village, tel: 020 7882 5522 · accommodation

Engineering Building

Foyer · wireless internet access

People's Palace

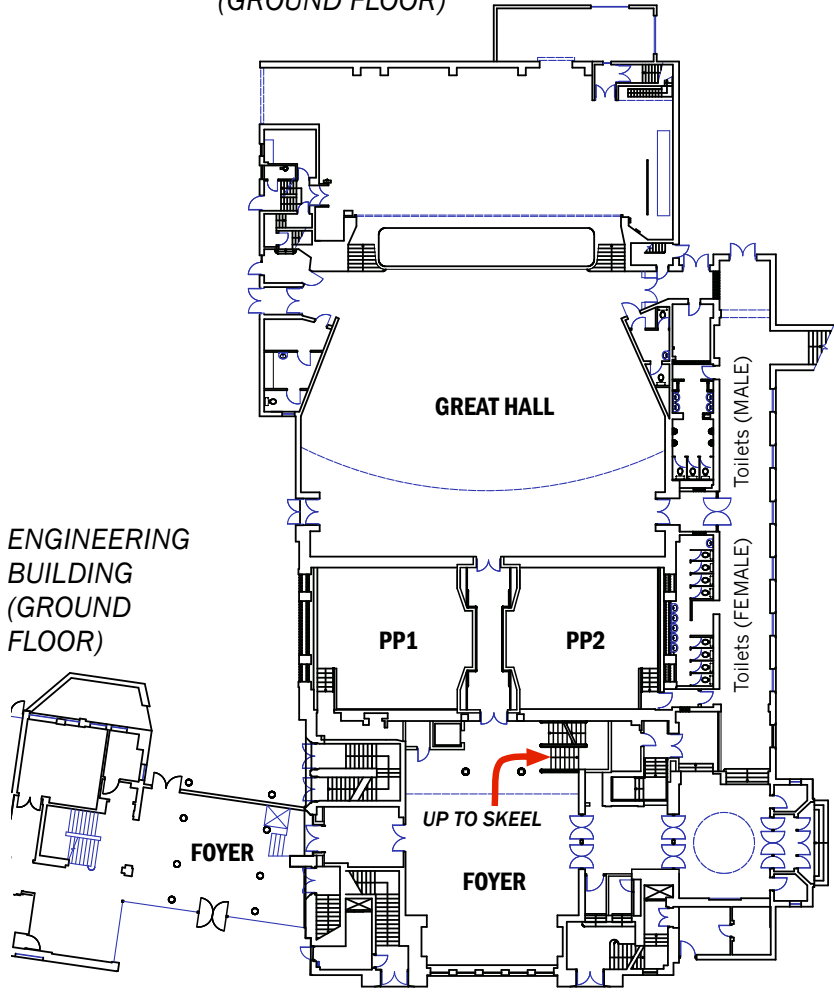
Foyer · registration and help desk, internet access

Great Hall · posters, lunches and breaks

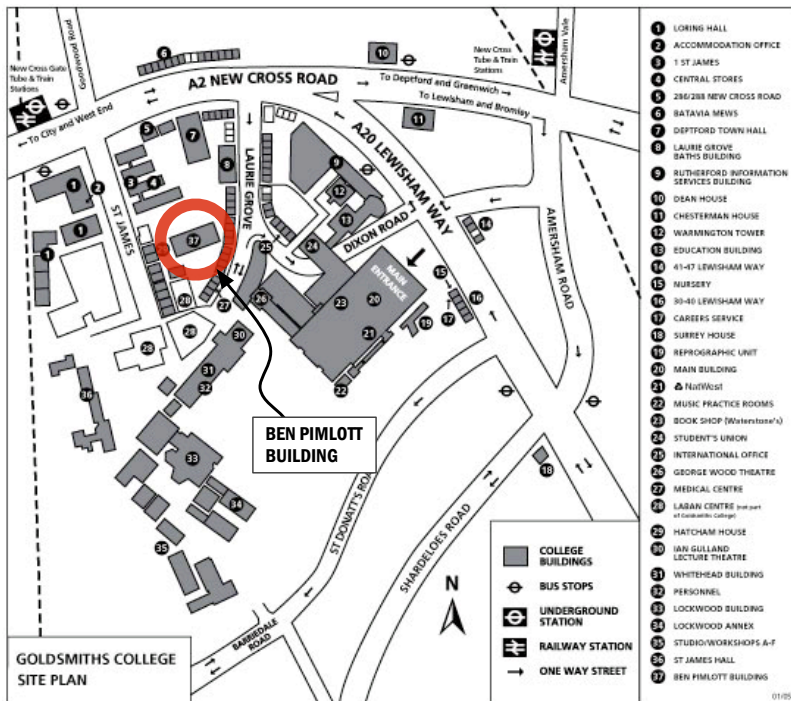
PP2 · parallel sessions

Skeel lecture theatre · main sessions

PEOPLE'S PALACE
(GROUND FLOOR)



MILE END ROAD



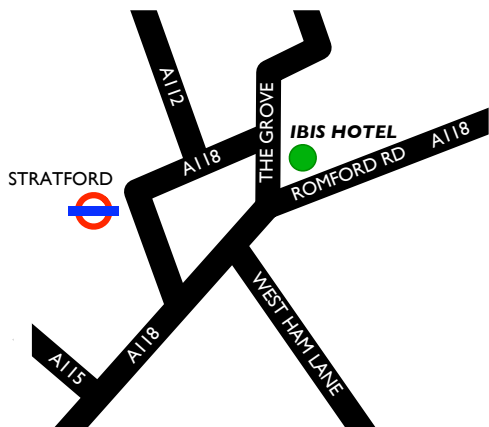
Goldsmiths' College, New Cross, London SE14 6NW, tel: 020 7919 7171.
Nearest tubes: New Cross (East London line) and New Cross Gate (East London line).

Ben Pimlott Building

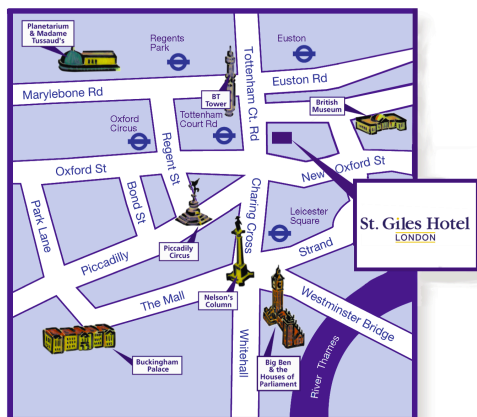
From New Cross Station: Turn right out of the station, and right again into New Cross Road. Keep straight ahead on New Cross Road. After crossing Lewisham Way, turn left into Laurie Grove. Turn right down a path between houses (signposted) opposite Dixon Road. The Ben Pimlott Building is in front of you, with the entrance down the path to the right.

From New Cross Gate: Turn left, and cross the road at the pedestrian lights. After crossing the road, turn right (back in the direction you have just come from) then after a few metres turn left into St James. About half way along this road, turn left to reach the Ben Pimlott Building.

Lecture Theatre · *tutorials*



Ibis Hotel, 1A Romford Road, Stratford, London E15 4LJ, *tel:* 020 8536 3700, *fax:* 020 8519 5161. *Nearest tube:* Stratford (Central and Jubilee lines).



St. Giles Hotel, Central London, Bedford Avenue, London WC1B 3AS, *tel:* 020 7300 3000, *fax:* 020 7300 3001. *Nearest tube:* Tottenham Court Road (Central and Northern lines).

NOTES



PHILIPS

Microsoft
Research



Digital Music
Research Network