SUMMER SCHOOL

SMC / ICMC Summer School 2014

Topic: Computational Music Analysis

Summer School organising committee:
Christina Anagnostopoulou and Aggelos Pikrakis (chairs), Anja Volk, Emilia Gomez.

Athens, Greece, 11 - 14th September, 2014

The Sound and Music Computing summer school promotes interdisciplinary education and research in the field of Sound and Music Computing. It is aimed at graduate students working on their Master or PhD thesis, but it is also open to any person carrying out research in this field. The 2014 SMC Summer School will take place in Athens, Greece, right before the SMC/ICMC Conference, between the **11th and 14th of September 2014**.

The topic of the summer school is **Computational Music Analysis**.

CMA Summer School Program
Location: Department of Informatics and Telecommunications, University of Athens
http://www.di.uoa.gr/eng/department/access

11th September
09:00 – 09.30   Welcome and coffee
09.30 – 11:00   Music Analysis Seminar – Costas Tsougras
11:00 – 11.30   Coffee
11:30 – 13:00   Music Analysis Seminar – Costas Tsougras
13:00 – 14:30   Lunch
14:30 – 16:00   Computational Music Analysis – Representations and Software – Alan Marsden
16:00 – 16:30   Coffee
16:30 – 18:00   Melodic Representation and Analysis – part I – Emilios Cambouropoulos
20.30   Welcome Reception at Costis Palamas Building, centre of Athens, 48 Akadimias Ave and Sina Street
(http://www.uoa.gr/to-panepistimio/yphresies-panepisthmiakes-monades/ktirio-kwstis-palamas.html)

12th September
09:00 – 10:30   History and architecture of Marsyas, a framework for audio analysis, synthesis, and retrieval – George Tzanetakis
10:30 – 11:00   Coffee
11:00 – 12:30   Computational modeling of rhythm and meter for music analysis, cognition and retrieval – Anja Volk
12:30 – 14:00   Lunch
14:00 – 15:30   Harmonic analysis and Creativity – Emilios Cambouropoulos and Costas Tsougras:
15:30 – 16:00   Coffee
16:00 – 18:00   Melodic Representation and Analysis – Part II – Olivier Lartillot

13th September
09:00 – 10:30   MIRtoolbox : Audio and musical feature extraction from recordings – Olivier Lartillot
10:30 – 11:00   Coffee
11:00 – 12:30   Projects
12:30 - 14:00   Lunch
14:00 – 15:30   Projects
15:30 – 16:00   Coffee
16:00 – 18:00   Projects
18:00 – 19:00   Experiment by Alan Marsden (Optional)

14th September
09:00 – 10:00   Publishing your work – Alan Marsden
10:00 - 10:30   Coffee
10:30 – 12:30   Project presentations
12:30 – 13:00   Concluding remarks

Projects: Each student must choose to participate in a project that will take place on Day 3 of the Summer School. A choice of projects will be available; Projects are proposed and supervised by Costas Tsougras, Alan Marsden, George Tzanetakis and Olivier Lartillot.

Background: One of the most important fields of sound and music computing is the study of the musical object itself, i.e. mu
Computational music analysis (CMA) is becoming more and more widespread, as computers can cope with extensive amount
comparative analyses of large musical corpora, and formalise the analytical process so that there are no gaps or hidden
procedure. The area of computational music analysis bears close links to the area of Music Information Retrieval, though the
former are more musicologically oriented, and the role of the human analyst can be considered indispensable, especially in th
of the algorithmic outputs. The summer school will engage with analysis of the audio as well as discrete score representations
is aimed at both computer scientists and musicologists/composers alike.

Structure: The summer school will be divided into three parts.

1. Introductory part:

- Introductory lectures and workshop in music analysis – various methodologies such as semiotic analysis, reductionist
  and motivic analysis. Emphasis on stylistic comparative approaches. Aimed mainly at computer scientists/engineers.
- Introductory tutorials on MIR systems for CMA: MARSYAS and MIR Toolbox. Aimed mainly at musicologists/musicians/c
- Introductory tutorial: Knowledge Representations and symbolic processing techniques for CMA. Aimed at both musi
  computer scientists.

2. Presentation of aspects of computational music analysis, including melodic, rhythmic and harmonic.
3. Project-based learning: 4 Specific projects, two based on symbolic representations and two based on audio. Various music
different types of music will be available for analysis.

Maximum 20 participants will be selected to attend. If you are a PhD student in music information retrieval, musicology, r
psychology, computer science, engineering, and related disciplines, you might find this summer school particularly exciting
towards the completion of your degree. If you work in MIR, you might find that this year's musicological orientation of the su
gives a new perspective to your current work. If you are a computer scientist or engineer, you will gain an understanding of m
methodologies and how to apply your skills in the analysis of music.

To apply: Please send a CV together with a covering letter explaining your motivation and experience to Christina Anagnostop
at music dot uoa dot gr).
Deadline for applications: **31st of May, 2014**. Applicants will be notified by the beginning of June whether their applicati
successful, and will be required to register to the Summer School by June 10th, in order to secure their place.
Update: Applicants are strongly encouraged to apply as early as possible as we have already received a high number of app
early applications will be given priority.

The cost of attending the summer school, including lectures, training sessions, laboratory material and coffee breaks is 240€.
Tutors include the following (in alphabetical order):

- Emilios Cambouropoulos, Aristotle University of Thessaloniki, Greece
- Olivier Lartillot, Aalborg University, Denmark
- Alan Marsden, University of Lancaster, UK
- Costas Tsougras, Aristotle University of Thessaloniki, Greece
- George Tzanetakis, University of Victoria, Canada
- Anja Volk, Utrecht University, Netherlands

Short CVs of the teaching staff are appended below:
Emilios Cambouropoulos is an associate professor of musical informatics at the School of Music Studies, Aristotle
Thessaloniki. He studied physics, music and music technology, and obtained his PhD in 1998 on artificial intelligence and
University of Edinburgh. Emilios Cambouropoulos has published extensively in the domain of computational musicology on to
musical representation, melodic segmentation, note spelling, beat-tracking, rhythm perception, voice/stream separation, patterr
melodic analysis, harmonic analysis, motivic categorisation. He is an associate/consulting editor in international journals
member of ESCOM and ICMPC. He is currently a partner in the EU project *COINVENT: Concept Invention Theory*, investigatir
musical creativity.

Olivier Lartillot is researcher in computational music analysis. He is finishing a 5-year Academy of Finland research fello
University of Jyväskylä. He is the main designer of MIRtoolbox, a computational framework for audio and musical feature ex
audio. He is releasing The MiningSuite, a new framework combining audio and symbolic analysis, and including pattern minin
metrical and structural analyses. He collaborates with the Swiss Center for Affective Sciences in projects related to music and
is co-instigator of CréMusCult project, funded by French ANR, an interdisciplinary study of traditional Mediterranean music cultu

Alan Marsden is a senior lecturer at the Lancaster Institute for the Contemporary Arts at Lancaster University, and editor of tl
New Music Research. His original training was in music analysis and he began to use computers in research in that field during
studies at Cambridge University. His research over the past 25 years has been directed towards formalisation of concepts
theory with the twin aims of more intelligent musical software and better understanding of music. Recent research has foc
computational analysis of musical structure, particularly software for Schenkerian analysis.

Costas Tsougras (composer - music theorist) studied composition at the Thessaloniki New Conservatoire and musicology at th
University of Thessaloniki (bachelor and PhD) and the Columbia University of New York (where he worked with Fred Lerdahl or
project involving the use of the Generative Theory of Tonal Music on 20th-century modal music). He is assistant professor of sy
musicology and music analysis at the School of Music of the A.U.Th. He has published theoretical and analytical work in interna
Greek journals or conference proceedings on GTTM, Modal Pitch Space, music cognition models, computational musicology, r
Greek contemporary composers (Skalkottas, Xenakis, etc.).

George Tzanetakis is an Associate Professor in the Department of Computer Science with cross-listed appointments in EC
at the University of Victoria, Canada. He is Canada Research Chair (Tier II) in the Computer Analysis and Audio and Music a
the Craigdaroch research award in artistic expression at the University of Victoria in 2012. In 2011 he was Visiting Facult
Research. He received his PhD in Computer Science at Princeton University in 2002 and was a Post-Doctoral fellow at Car
University in 2002-2003. His research spans all stages of audio content analysis such as feature extraction, segmentation,
with specific emphasis on music information retrieval.

Anja Volk holds master degrees in musicology and mathematics and received her PhD in computational musicology fro[...] University of Berlin in 2002. After two post-doc periods at the University of Southern California and Utrecht University, s[...] awarded a prestigious VIDI grant from the Netherlands Organisation for Scientific Research in 2010, which allowed her to s[...] interdisciplinary research group MUSIVA as an assistant professor at Utrecht University on the topic of music similarity. H[...] interests and publications embrace Music Information Retrieval, Music Cognition, Computational Music Analysis, Mathem[...] Theory, Performance Theory and Computational Humanities.She is a board member of the Society for Mathematics and Co[...] Music and of the International Society for Music Information Retrieval.

The summer school will take place at the Department of Informatics, University of Athens.
http://www.di.uoa.gr/eng/department/access

Some tips for accommodation and transportation:
A decent hotel with good prices, where several university visitors have stayed in the past few months, is this.
It is located 1.3 Km far from the summer school venue, but if you stay there, you can easily take the 250 bus that enters t[...] campus and stops right outside the department of informatics. The 250 bus has a stop very near this hotel. An alternative is [...] which leaves you within a short walking distance from the dept, but on the main street, "Εθνικής Αντιστάσεως". In this case, [...] station 10.
Regarding the hotels, two other (more expensive) options are the Divani Caravel (near the previous hotel) and the Crown Plaz[...]
In general, you do not need to book so close to the campus, because wherever you stay, you can always take the metro a[...] "Ευαγγελισμός". Buses 250 and 224 both stop in front of the metro station.
Taxis are also inexpensive in Athens, so you can use them easily to come to the University.

Further information and Inscription:

Please email Christina Anagnostopoulou on chrisa@music.uoa.gr