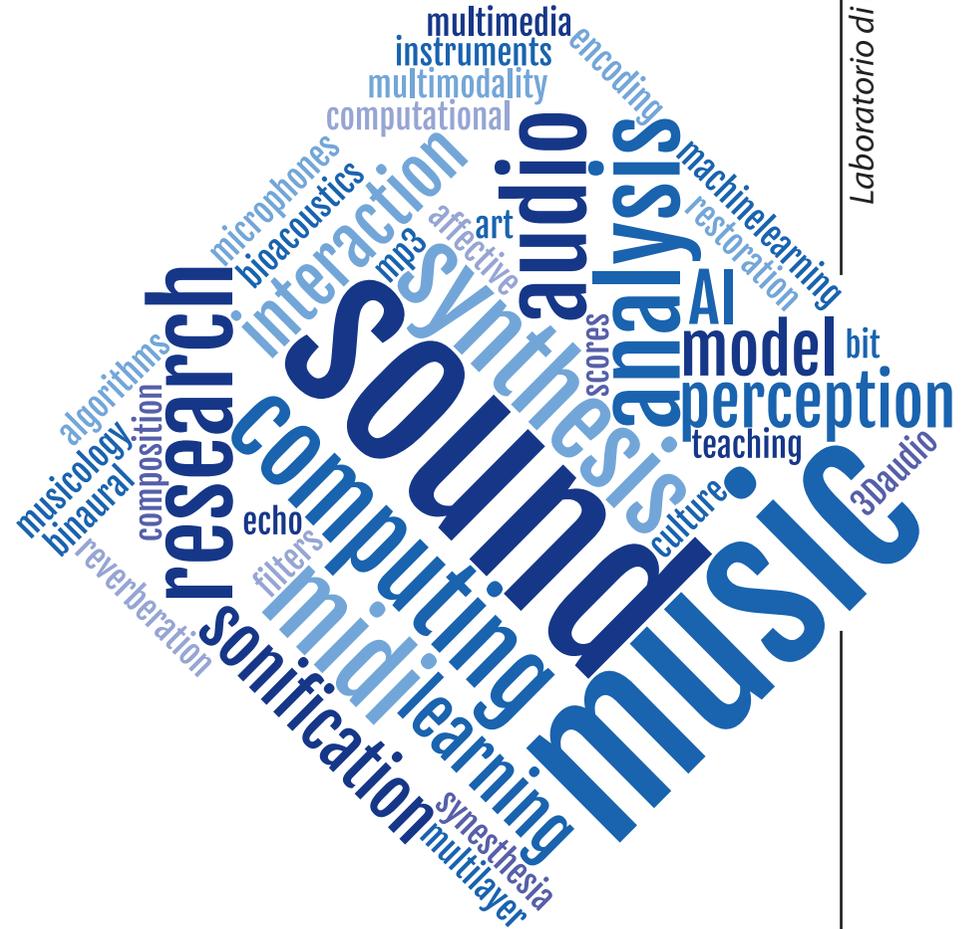
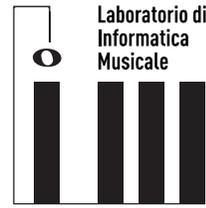


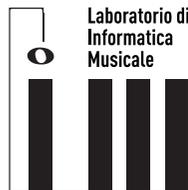
## Laboratorio di Informatica Musicale

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The activities of the  
Laboratorio di Informatica Musicale



UNIVERSITÀ  
DEGLI STUDI  
DI MILANO  
*Dipartimento di  
Informatica*

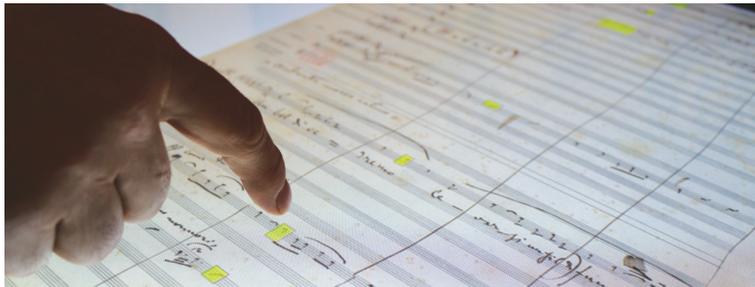
## Research Topics

- Sound & Music Computing
- Multilayer navigation of music contents
- Music Information Retrieval
- Sound synthesis and rendering in interactive contexts
- Technologies for music teaching and learning
- Cultural heritage preservation and exploitation



## Standards for Music Representation

The LIM is actively involved in the creation of international standards for the representation of music information. In 2008 it played a key role in the standardization of the IEEE 1599 format, and currently it is leading the revision of the standard. Additionally, the LIM contributes to the revisions of the MIDI standard and to the W3C group on new formats for music notation.



## Projects and Collaborations

Along more than 30 years of activities, the LIM has taken part in national and international scientific projects and has established collaboration with several institutions, including: Teatro alla Scala, Bolshoi Theater, RAI Radiotelevisione Italiana, RSI Radiotelevisione Svizzera, Microsoft, Verdi Orchestra of Milan, IEEE Computer Society, Ricordi Historical Archive, Italian Ministry of Cultural Heritage.

Among the most notable projects, relevant examples include the digitization and exploitation of the Teatro alla Scala archives, the realization of the sound section of the National Science & Technology Museum in Milan, the release of multimedia products for Pearson, the project Bach Digital with the Leipzig Bach Archiv, the realization of the music collection of the European Library of Information and Culture (BEIC), the research on 3D audio for the NASA Charles Ames Research Center.

## Staff

|                      |  |
|----------------------|--|
| Full professors      | Goffredo Haus (scientific director)  |
| Associate professors | Federico Avanzini  |
| Adjunct professors   | Paolo Cattaneo<br>Simone Coen<br>Giovanni A. Del Bene<br>Franco Fabbri<br>Fabio Mancini<br>Antonio Mancuso |
| Researchers          | Adriano Baratè<br>Luca A. Ludovico<br>Mario N. Malcangi<br>Stavros Ntalampiras<br>Paolo Perlasca           |
| Post-doc associates  | Giorgio Presti   |
| Ph.D. students       | Axel Chemla-Romeu-Santos   |
| Assistant            | Marisa Pelegrin Pajuelo  |

## Teaching

Within the degrees offered by the Computer Science Department, the LIM is the reference research structure for education in topics related to sound and music computing.

The study path is structured as follows:

- **Bachelor degree in Music Informatics;**
- **Master degree in Computer Science**, with a major in Music Informatics;
- **PhD in Computer Science**, with research topics in Sound and Music Computing.

Within the bachelor degree, the LIM staff is in charge of courses in Acoustics, Databases, Economy of Musical Heritage, Informatics for Music, Informatics for Sound, Legal Aspects of Music Information, Methods and Technologies for Music Publishing, Models of Music Perception, Music Semiotics, Digital Technologies for Music Information Restoration.

Within the master degree, the LIM staff is in charge of courses in Audio Pattern Recognition, MIDI Programming, Music Programming, Organization and Digitization of Multimedia Archives, Sound in Interaction, Timbre Programming.

## Equipment

LIM assets include a research lab (approx. 100 m<sup>2</sup>), a silent booth and a large acoustically insulated room with reconfigurable internal acoustics. The lab is equipped with dedicated instrumentation, including devices for the digitization and restoration of analog audio materials, MIDI chains, and electronic musical instruments.