About This Issue

Among the items in this issue's News section, we include an obituary for Pierre Boulez, who, besides being a distinguished conductor and one of the most famous composers of the 20th century, founded a prestigious computer music center, the Institut de Recherche et Coordination Acoustique/Musique (IRCAM) in Paris. Additionally, several prominent individuals have supplied letters to the editor of *Computer Music Journal* recalling their work with Boulez.

Two of the issue's articles concern the development of new performance interfaces. One article of this pair focuses on a practical and historical topic, the other, a more theoretical topic having import for future interfaces. In the first article, Giuseppe Torre, Kristina Andersen, and Frank Baldé present a detailed look at the development of a renowned and pioneering digital musical controller: The Hands. The inventor of this controller, Michel Waisvisz (1949–2008) of Amsterdam's Studio for Electro Instrumental Music (STEIM), was more concerned with refining the device and using it in his own performances than with documenting its design and implementation for future scholars. The *CMJ* article therefore serves as a welcome exposition of the device's features and how they changed across its various incarnations.

In the second article, Dalia El-Shimy and Jeremy Cooperstock consider techniques for evaluating new digital musical instruments (DMIs). This topic brings to mind the special issues of *Computer Music Journal* on human–computer interac-

tion (HCI) in music (*CMJ* 34:4–35:1), and in particular Sile O'Modhrain's article on evaluating DMIs. Whereas O'Modhrain's article examined the needs of multiple stakeholders (performers and composers, audiences, designers, and manufacturers), the current article focuses on the users of the instrument. More specifically, it explores the HCI techniques of "user-driven" design and evaluation, and it considers how these techniques might be transferred from the utilitarian setting typical of much HCI research to the creative milieu of DMIs. The authors survey the literature and then offer some guidelines for DMI designers who would like to incorporate user-driven techniques into the development of their new interfaces.

Natasha Barrett's article presents her Max/MSP application for interactive, 3-D sonification of multidimensional data. She stresses the system's utility for both art and science. In the former case, composers can use the tool to experiment in real time with spatial sound processing and synthesis, perhaps towards the goal of making space an integral aspect of a composition's structure. In the latter case, scientists can harness auditory display to reveal properties of their time-varying, multidimensional data sets. As an acousmatic composer, Barrett draws upon her own extensive experience and also on others' musical concepts (for example, the "language grid" described by Simon Emmerson in one chapter of his anthology *The Language of Electroacoustic Music*). She has also

collaborated with geoscientists to demonstrate her software's suitability for scientific applications.

The issue's final article, by Valerio Velardo, Mauro Vallati, and Steven Jan, researchers from the University of Huddersfield, looks at an important topic in music information retrieval (MIR). As many readers know, MIR is generally considered to be divided into two main branches, based on the type of musical representation: a low-level audio signal, on the one hand, and, on the other, a higher-level symbolic representation of musical notes, such as a score or a MIDI rendition. This final article lies in the latter area of MIR, with its particular topic being algorithms that measure the similarity of two melodies. The authors survey the state of the art (the last such survey having been published a decade ago). They then analyze some 15 systems that calculate melodic similarity. The analyses are based on eight criteria developed by the authors. The authors also propose a taxonomy for classifying such systems, and they offer suggestions for future algorithm developers.

The Reviews section assesses two CDs. One features a guitar-and-laptop duo (Yannis Kyriakides and Andy Moor), the other a flute-and-clarinet duo (Elizabeth McNutt and Esther Lamneck) that is accompanied by computer-generated sound. Wrapping up the issue, the Products of Interest section reports on hardware and software products such as audio interfaces, synthesizers, microphones, digital audio workstations, and plug-ins.

Front cover. The three versions of The Hands, which are explained in the article by Torre, Andersen, and Baldé. (Photos courtesy of Daniel Buzzo.)

Back cover. A conceptual flowchart from the article by Natasha Barrett.