



A NATIONAL SCIENCE FOUNDATION
ENGINEERING RESEARCH CENTER

INTEGRATED MEDIA SYSTEMS CENTER
A National Science Foundation
Engineering Research Center at the
UNIVERSITY OF SOUTHERN CALIFORNIA

FACULTY SUPERVISOR
Elaine Chew

USC STUDENTS (EXPECTED DEGREES):

Cheng Zhi Anna Huang (BM MUCO, BS
CECS)



MUSIC PROCESSING: Palestrina Pal

A Grammar Checker for Music Compositions in the style of Palestrina

Modified Palestrina's Sicut Cervus Measure 47

BRIEF DESCRIPTION OF TECHNOLOGY DEMONSTRATION

Palestrina Pal is a JAVA-based composition tool that automatically checks for Palestrina style rules. By automating the rule-checking process, the application allows composers to focus on higher-level aesthetic issues. The application interface contains various panels for data input and error visualization. The software uses the GUIDO music notation format and an object-oriented design that mimics the human evaluation process.

UNIQUE OR DISTINGUISHING CHARACTERISTICS RELATIVE TO STATE-OF-THE-ART

Our goal is to create a composition tool that can assist composers in the creation of better Palestrina style compositions, and that can be put to practical use in current music education systems.

APPLICATIONS

- Computer-Aided Composition (CAC)
- Computer analysis of music
- Music Education

RECENT HIGHLIGHTS, LEVEL OF DEVELOPMENT, UPCOMING MILESTONES

- Highlights: *First prize winner* of the 2004 USC Undergraduate Research Symposium (Interdisciplinary Award), software demonstration at the Annenberg Communications Critical Pathway Symposium
- Future work: Display statistics in analysis of errors and idioms, improve user interface by adding piano roll visualizations that show imitations at different time and pitch intervals, enable playback of any voice combinations, incorporating secondary level rules, and generate recommendations for corrections

UNDERLYING TECHNOLOGIES

- The software was implemented using Java2 SDK, Standard Edition.

LIST OF PUBLICATIONS, REFERENCES, URLs

- Benjamin, T. (1979). *The Craft of Modal Counterpoint*. Canada: Schirmer Books.
- Bennett, R. (1987). *History of Music*. United Kingdom: Cambridge University Press.
- Farbood, M. & Schoner, B. (2001). *Analysis and Synthesis of Palestrina-Style Counterpoint Using Markov Chains*. Proceedings of International Computer Music Conference. Havana, Cuba.
- Hoos, H.H., Hamel, K.A., Renz, K. and Kilian, J. (1998). *The GUIDO Music Notation Format – A Novel Approach for Adequately Representing Score-level Music*. Proceedings of the International Computer Music Conference, p.451-454.
- Kennan, K. (1999). *Counterpoint*. (4th ed.). New Jersey: Prentice-Hall.
- The GUIDO Music Notation Format Page: www.informatik.tu-darmstadt.de/AFS/GUIDO

For additional information, please contact the Principal Investigator listed above via email, or contact

Isaac Maya, Ph.D., P.E.

Director, Industry and Technology Transfer Programs

213-740-2592

imaya@imsc.usc.edu

Integrated Media Systems Center
3740 McClintock Avenue, Suite 131
Los Angeles, CA 90089-2561
213-740-8931 (fax)

For additional information on the Integrated Media Systems Center (IMSC), please visit our Web site at <http://imsc.usc.edu>