

Interactive Spoken Language Education – Annual Report 1998

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<http://www.ec-isle.org>

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ISLE addresses the undeniable need in Europe for cost-effective and efficient foreign-language learning. It aims to integrate state-of-the-art speech recognition technologies with custom-built diagnostic tools that can provide a student with specific and accurate feedback on the quality of pronunciation. The resulting tools will be easily usable by course designers in a variety of multi-media authoring environments.

Summary of 1998 Activities

In the first seven months of project ISLE, work has focussed on several areas:

- ◆ an exhaustive *market study* to assess the demand for and existing competitors to ISLE technology
- ◆ a large query of potential *users* for ISLE technology, including both language teachers and language learners
- ◆ design and construction of an *initial prototype* for the visual “front-end” that mediates between the teacher, the student, and the ISLE diagnostic functions
- ◆ implementation of the *basic components* that will provide recognition of non-native speech, detection of errors, and diagnosis of the errors that were made

In 1999, the project will focus much more on the technical problems, producing a real demonstrator of the system, and testing and improving the ISLE components until optimal performance is achieved.

Market Prospects

There is currently a large market for “edutainment” software within the European Union. In addition, there is a clear demand for tools to assist in second-language learning, especially when that language is English. Nevertheless, without a workable speech recognition component, such language-learning software seems doomed to low quality and hence a small market potential. Recent years have seen increasing use of speech technology in low- and medium-cost software, yet there has not yet been a truly good integration that uses such technology fully while avoiding many of the pitfalls it introduces. ISLE addresses these problems by (a) using the best speech recognition technology available; (b) creating novel, dependable, and robust tools for finding and describing errors; and (c) integrating this within an easy-to-use and entertaining but traditional language-learning framework.

ISLE Technology

The core of the ISLE technology is provided by Entropic Cambridge Research Laboratory’s IHAPI speech recognition toolkit. IHAPI already provides robust recognition of native speech, and work is currently under way to improve recognition of non-native speech to levels as close to that of native-speech as possible. Working in parallel with this recognizer will be tools (already partially developed by the Universities of Hamburg and Milan) to find errors and provide feedback to the student. Because many of the errors to which intermediate level students succumb are predictable based on their mother tongue or on the irregularities present in English, a relatively small set of errors can be targeted. Finally, the undeniably important yet difficult to solve problem of stress-based errors will be handled by an additional tool that integrates with IHAPI to discover cases in which the student has placed stress on the incorrect syllable of a word.

The ISLE Prototype Interface

Although the most important part of the ISLE project is to produce a set of tools that can be easily used by any group interested in producing a multi-media language-learning software package, to demonstrate the feasibility of our ISLE approach, two fully-functional example applications shall be built, one for Italian and one for German learners of English. Dida*El, a company with many years experience in producing such multi-media based software, will build the initial “face” of the ISLE technology. An initial prototype of this interface has already been completed and integrated with the first-generation ISLE tools, and in the next six months the much more complete Demonstrator will be completed.

ISLE Promotion and Awareness

Because the goal of ISLE is to produce marketable tools, it is important both to get feedback from and to develop awareness with language teachers and multi-media software producers. Although this task will of course become far easier when the Demonstrator is ready, ISLE has already exploited several means of increasing awareness. In order to assess the desired features of the ISLE system, a large group of language learners and teachers was surveyed by the University of Leeds partners; at that time, many of the users expressed interest in the resulting technology. In addition, Ernst Klett Verlag has produced and distributed the first of two planned brochures advertising the ISLE project. Finally, the central web-site has moved from the University of Hamburg to the more attractive www.ec-isle.org domain.

Future Work

Begun in April 1998, ISLE has already made significant progress towards its goals. Nevertheless, in 1999 we will see the first clearly visible results with the release of the initial Demonstrator in the spring. At that point we will be able to integrate the existing ISLE components, and test a working system with actual language learners. This will allow us to focus directly on improvements—to the interface, to the type of feedback given to the students, to the recognition, and to the diagnostic components.

Further Information

To learn more or to stay informed of current progress, please visit our web-site at www.ec-isle.org or contact us for more information (contact information is available on the web page.)