

**Studies on Construction and Utilization of a Common Platform
for Embodied Conversational Agent Research**

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【Outline of survey】

Embodied Conversational Agents (ECAs) are interactive synthetic characters that a computer program generates for allowing the user to make functional, emotional, or social interactions with the computer using nonverbal communication means such as facial expressions or hand gestures. Since the ECA systems are usually complex programs that encompass speech processing, natural language processing, image processing, discourse management and so on, it is hard for small research groups to take part in the research field. In order to resolve the difficulty, we have been working on developing a generic ECA (GECA) platform that permits the system builder to combine software components on heterogeneous distributed computers using a blackboard model. In this project, we aim to accomplish the following goals (1) establishment of the GECA programming environment, (2) development of a collection of standard software components for building ECAs on the GECA platform, (3) building an ECA behavior model based on a corpus, (4) development of ECA evaluation measures and evaluation based on deployment, and (5) making proposals for standardization.

【Expected results】

We expect that this research will bring the ECA systems on a practical stage, which will in turn allow researchers find practical research subjects that are hard to find from small scale prototypes in a laboratory. It is highly expected that the project, when completed, will accelerate the practical applications of ECA systems that depend on highly sophisticated interactive knowledge presentation, and contribute to collaboration between experts and citizens, knowledge transfer in organizations, cross-cultural understanding, and so forth where ECA may take an active role in conversation.

【References by the principal investigator】

- Toyoaki Nishida (ed.). Engineering Approaches to Conversational Informatics, John Wiley & Sons, Ltd, (to be published in September 2007).
- Hung-Hsuan Huang, et al. Toward a Universal Platform for Integrating Embodied Conversational Agent Components, in: B. Gabrys, R.J. Howlett, and L.C. Jain (Eds.): KES 2006, Part II, LNAI 4252, pp. 220 – 226, 2006.

【Term of project】 FY2007—2011

【Budget allocation】 19,100,000 yen

(2007 direct cost)

【Homepage address】

<http://www.ii.ist.i.kyoto-u.ac.jp/ecap/>