



## Personal Robot PaPeRo and its application as Childcare Robot

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<http://www.incx.nec.co.jp/robot/>



## Research and Development of Robot at NEC as Friendly Communication Agent

R100 Project [1997 Jan. ~ 1999 July]



- First Prototype Robot
- Proposition of Concept 'Robot as Friendly Agent'

PaPeRo Project [1999 Aug. ~ ]



- Reliable, Safe Prototype Robot for Experiment in Real Environment
  - Monitor Test at 100 homes (1000hours in total)
  - Experiment at nursery, nursing home for elderly
  - Collaborative research with Human Science researchers
  - 6 months experiment at EXPO2005 Aichi, Japan



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### Objectives of experiment in real environment

- Verification and Improvement of Technology
- Collaborative research with Human Science researchers for better understanding of robot
- Findind good application

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### Collaborative Research with Human Science Researches



#### Psychodrawing

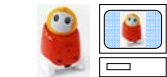


Image of robots in Childrens' mind  
Prof. Ito, Kobe Univ.

#### Cognitive Science



Image of robots compared with other objects  
Prof. Sakamoto Ochanomizu Univ



Difference of cognition between real robot and CG characters  
Prof. harada Hosei Univ

### What is Childcare Robot PaPeRo?

#### Capabilities



Recognition/ verbal communication



Singing along



Playing games



Remote-communication with cell-phone

Useful at:

daycare centers, kindergartens, elementary schools

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### Experinment of Childcare Robot at EXPO 2005 Aichi, Japan

- 3 robots for interaction experience for 15 min.
- Attendants help children. 4 children for each robot
- about 200 children experience interaction everyday
- Up to the August, **670,000 people visit the room** and **24,000 children enjoy interaction with PaPeRo**
- Several children visit repeatedly. Some comes more than 10 times
- A lot of data correction
  - Recognition rate in noisy environment
  - Questionnaires both in Human Science and Marketing



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