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AtGentive : Attentive Agents for Collaborative Learners

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knowledge, perspective, understanding

INTRODUCTION

Objectives :

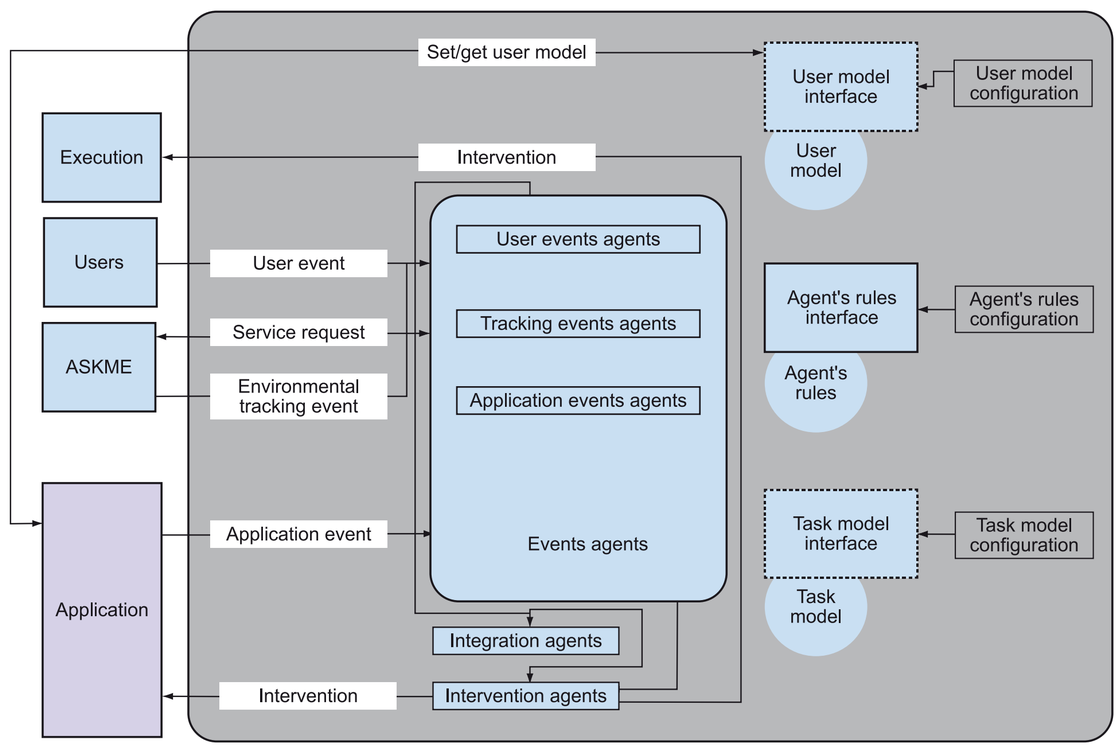
- Investigate the use of **artificial agents** for supporting **attention** of young or adult learners in the context of **individual and collaborative learning**
- Establish conceptual models of learner's attention and motivation,
- Develop software components implementing the models
- Validate hypotheses in two pilot studies

AtGentive is based on a **conceptual framework** that :

- Provides a theory describing the many aspects of attention-support in learning and collaboration
- Describes the models used in **AtGentive** (user, task and attention)
- Describes the communication messages allowing the various modules (user tracking, application, etc) to communicate

AtGentive Agents :

- Help learners in managing their attention in the learning process
- Appear to the user as an **embedded character** who is the front end of the system
- Profile the short or long term state of the attention of the learners by observing their actions
- Assess, analyse and reason about the learner's states of attention to provide interventions supporting learning



OVERALL ARCHITECTURE

AtGentive software components :

- **AtGentive aware application**, able to pass events describing users' actions to the reasoning module
- **User tracking module**, measuring the physical and psychological states of the user
- **Reasoning module**, computing optimal attention foci and suggesting contextual help
- **Embodied agent** in charge of interacting with the user

The **reasoning module** is fed by the application and the user tracking module ; it produces interventions that can be proposed to the user. The system interacts with the user through the **embodied agent**, piloted by the application on the proposals from the reasoning module.

REALISATION

ATGENTSCHOOL TEST PLAT-FORM :

Ontdeknet e-learning plat-form + **AtGentive** (Reasoning Module, user tracking, embodied agent).

AtGentSchool is web based, the character has been experimentally validated to support elementary school children.

ATGENTNET TEST PLAT-FORM :

ICDT collaboration plat-form + **AtGentive**.

AtGentNet is web based, the character has been experimentally validated to support older learners.

VALIDATION

The **AtGentive** project is being validated by two experiments done in Czech Republic schools on children, and in a professional environment on customers of the Swedish Trade Council.

RESULTS SO FAR FOR ATGENTSCHOOL :

- 90.5% of the students would like to work with the embodied agent again
- 9.5% would like to work with a different agent than the one used
- 90% found that the agent provided good help
- 62% want to work with an agent more often

CONCLUSIONS

Preliminary results indicate that learners working with the **AtGentSchool** make at least the same learning progress than learners not using it.

The learners declare to be from "very pleased" to "happy" to work with the **AtGentive** companion and are spontaneously interacting with it. Teachers also declare to be interested to work more with this kind of learning system.

The interventions proposed to learners are used by them for inflecting their activity.

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