
Виртуален асистент

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Ученически институт към Българска академия на науките, 2017
София, България

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Абстракт

Изградени са много системи за управление на обучението, но нито една от тях не използва най-новите технологии в обучението (няма система, която да обединява изкуствения интелект и виртуалната реалност в едно).

Основната цел на нашия проект е създаването на система, която да използва тези технологии и да създадем „виртуален асистент“, който да конбинира най-добрите практики в организирането на обучения, така че да са интересни, полезни и максимално улеснени за учениците. Най-важната част от проекта ни е да стимулираме учениците, показвайки им, че предметите не са толкова трудни, колкото изглеждат.

Асистентът ще помага на учениците като отговаря на въпросите им към уроците и като им дава различни по тип задачи, които ще включват теоретична част, но в по-голяма степен ще са ориентирани към практиката.



1 Въведение

"Система за управление на обучението"

Това е софтуер за администриране, документиране, приследяване, публикуване и получаване на обучителни курсове и тренировачни програми.

Wikipedia

"Виртуален асистент"

Това е система, която трябва да помага на учениците по интерактивен, интересен, полезен и по-лесен начин за тях. Тя може да бъде представена като "индивидуален ментор" по съответния предмет.

There are a lot of built-in learning management systems, but there are not any system that combines artificial intelligence and virtual reality at once.

The aim of our project is to create system that to build "artificial teacher" by following newest technologies and best practices in organizing training so that it will be interactive, interesting, useful and much easier for the students. The most important part of our project is to fertilize students, showing them that their subjects is not as difficult as sound.

Teacher will train student by lessons and different types of exercises

which will include theoretical part, but will mostly be oriented practically.

2 Implementation

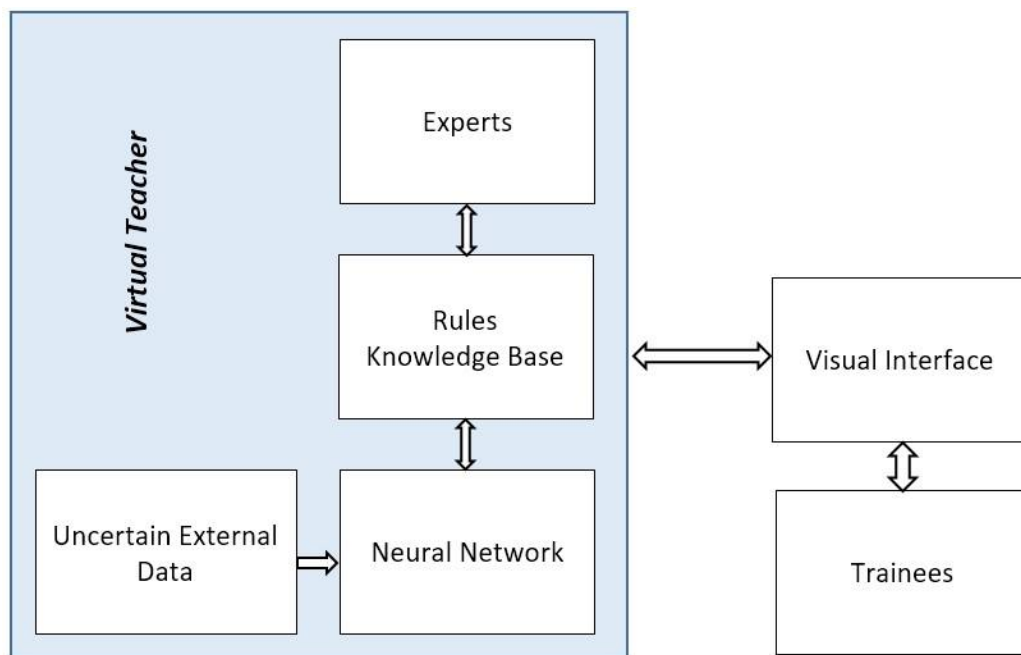
The project is divided into three parts:

appearance Design, which must implement human facial expressions for better and realistic interactive communication.

intelligence Application Programming Interface that must return material which must be learnt by student

This interface uses data base to make information which will be used to build knowledge base where data base is simple data about how students visit resources and knowledge base is system of logical conditions.

communication Live bot chat for all questions during the lesson that "artificial teacher" presents.



Each part has a lot of specifics and the project is quite challenging, but it would give a different, modern outlook to the future learning process.

2.1 Problems

2.1.1 Application Programming Interface

The most important thing, when you develop artificial intelligence by Neural Networks, is that you must have enough information, which is performed as systematic organized data, that you will use as material for building knowledge base.

Current training data is only sample data and it is not so formal, but is enough for start.

2.1.2 Design

Design is not ready yet, because it costs a lot of time until we design 3D object and until we implement all human facial expressions.

2.1.3 Communication

The biggest problem in this part of the project is how to understand what the student want to know. It will be solved by "machine learning" where the data will be conversations between real students and teachers.

3 Techniques

- C++ for AI in combination → FastCGI++ for the API
- WebGL for rendering the 3D model of the teacher
- MakeHuman for building the 3D model of the teacher

4 Future

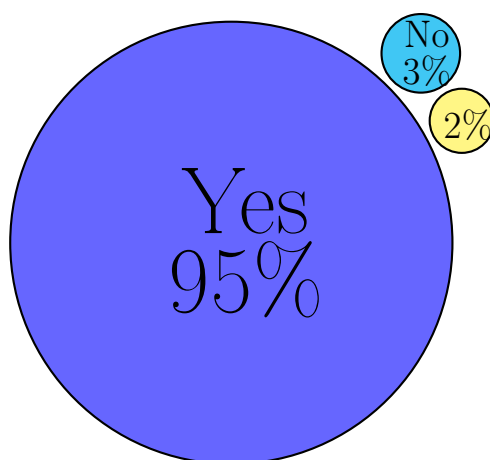


Future development includes building a 3D model of the teacher and developing of the facial human expressions together with psychologists. It includes also improving "intelligence" of the teacher and applying the technology in school starting from Sofia Professional High School of Electronics "John Atanasov" and Sofia High School of Mathematics "Paisii Hilendarski".

Survey questions

1. Do you support building an online learning system and using it in school?

The diagram shows the results of non-representative survey conducted among 55 students of SHSM:



So those results stimulate us to make it better and better and to make it make more interesting, more interactive and more entertaining.

5 Acknowledgments

Special thanks to:

- Zlatogor Minchev for the improvement of the idea
- Emil Kelevejiev for the improvement of the documentation

Thanks also to:

- High School Students Institute of Mathematics and Informatics
- Bulgarian Academy of Sciences
- Sofia High School of Mathematics

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