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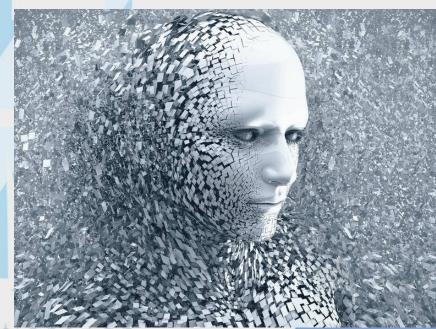
Athens, 1–2 December 201





End of an ERA

We are the last generation being more intelligent than the existing technology









We 've changed....

from Homo Sapiers

Advanc &











GREECE 2017

AR Tutor





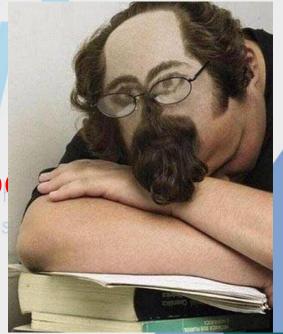
We've changed the way we learn...

becomes

thus, in some cases education



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An alternative....



learn **moodle**

learn.moodle.net

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& Mobile Applicati







But couldn't be better?





How about combining Moodle with A ?

ional Technologies plications Lab





The ideas are ...



R Tutor To Augment content available via Moodle

To increase user interaction with the platform

To immerse the learner into the content









We propose the use of.

1) AR Tutor can be used for creating Augmented enhanced content

2) Has the advantage of voice interaction with the user



Advantages of ARTutor

- Easy to use No special IT or programming skills are required
- Applies on PDF books, already distributed via Moodle

 ARTutor uses the same PDF to create the augmentations (while in other platforms only image files can be used as triggers)





 All books are freely available and visible from the application

• Augmentations are common file types (.FBX, .OBJ, .DAE created by Maya, Blender etc or .armodel for Kudan SDK)





Advantages of ARTutor

Traditional printed books can be also

Multi-purpose (not only for education!) gies Mobile Applications Lab





Characteristics



AR Tutor consists of two parts :

PART A:

- Authoring tool
 - Google account login
 - Book creation
 - Association of books with augmentatio
 - Association of augmentations with commands

uide from Wikipedia	
Guides	
Drag & drop to replace book	

/R

Signed in as: Εργαστήριο Προηγμένων αρμονών και Επαυξημένης







Characteristics

- PART B:
- Mobile application
 - Book selection
 - Page recognition
 - Augmentation presentation
 - Voice commands aced Educationa & Mobile Applica
 - Q&A system











Book creation

- Books have a title, a description, and a category
- The book's language is also specified
- PDF files are uploaded
 with drag-and-drop d Edu
- When a PDF file is uploaded, the content is extracted and it is saved in a separate text file





	Title	
	Description	
	Select book category	
	Drag & drop book here	1
	Ελληνικά	
	Assets	
Title	Type of augmentation	
	← Back Add new asset Save book	

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Augmentation creation (1)

xX

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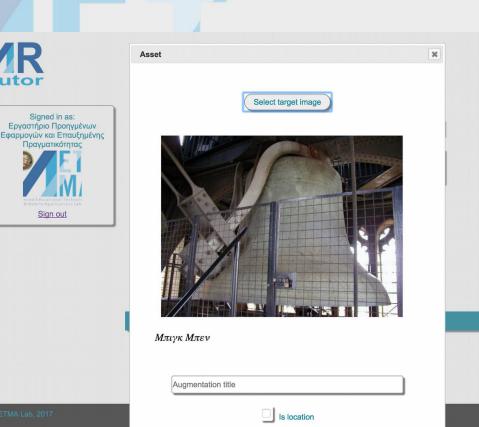
- Each book can be associated with multiple augmentations
- The user selects regions in various pages and
 Associates them with augmentations

Signed in as: Εργαστήριο Προηγμένων Εφαρμογών και Επαυξημένης Πραγματικότητας	Select target image Augmentation title		Signed in as: Εργαστήριο Προηγμένων Εφαρμογών και Επαυξημένης Πραγματικότητας	Page: 1/3		
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© AETMA Lab, 2017	Eastern Macedonia and Thrace Institute of Technology		© AETMA Lab, 2017	16% Concident 15% To via Konepolita grimme en veneration and A was an lamy rimer as object, and particular and an anti-anti-anti-anti-anti-anti-anti-anti-	fnood	em



- After region selection, the actual augmentation is uploaded
- Accepted types:
 - Image
 - Audio
 - Video
 - 3D models

Advanced Educa & Mobile Ap







Augmentation commands

- Depending on the augmentation type, each augmentation can also be associated with commands,
- which allow voice interaction of the user and the augmentation

Available commands	Commands on asset
Stop	Enlarge
Start	Shrink
Rotate	
Save	e asset

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Mobile application

- Developed for the iOS and Android platforms
- The user initially selects one of the preset book categories
- The application fetches the corresponding books from the server



Books

Guides

Is Lecture note



Tutor





Displaying augmentations

1 94%

●●●○○ COSMOTE 🤶

ARTutor books

awkó Korvoßońk

19:42

Το πολίτευμα του Ηνωμένου Βασιλείου είναι Βασιλευομένη Κοινοβουλευτική Δημοκρατία. Η νομοθετική εξουσία ασκείται από το κοινοβούλιο,

που αποτελείται από δύο σώματα, τη Βουλή των

Τα μικρότερα Έθνη του Ηνωμένου Βασιλείου, η Βόεια Ιρλανδία, η Ουαλία και η Σκωτία διαθέτουν από

1998 τοπικά αιρετά νομοθετικά σώματα και κυ-

ονήσεις. Η κεντρική κυβέρνηση έχει παραχωρήσει σώματα αυτά αρμοδιότητες σε ζητήματα όπως η

αίδευση, οι μεταφορές και το περιβάλλον. Ωστόσο

έλευσης της Βορείου Ιρλανδίας έχει αναστα

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διατηρήσει το δικαίωμα να παύει ή να

λειτουργία τους σε περιπτώσεις εκτ

ή όποτε κρίνει απαραίτητο. Λόγω

τάστασης στη Βόρεια Ιρλανδία τ

Λόρδων και τη Βουλή των Κοινοτήτων.

1 95%

Help

18:22

 After book selection, the book assets (augmentations) are downloaded on the device



οίο περιγράφει τα νησιά ο Πυθέ

την Αγγλία, τη Αγγλους, τους Σάξονες, τους Ιούτους, που ήταν γερ-

us the Bopeiou And to 150-650 M.X. apriler y περιλαμβάνει σιού (εκτός από την περιοχή της

●●●●○ COSMOTE 🤶

 Camera searches for active regions in the printed version of the ite book



Voice commands



- Users can interact with the augmentations using gestures (pinch to zoom, tap to start/stop, slide to rotate)
 - Based on the specified commands for each augmentation

- Commands can also be used for interaction using speech recognition
 When an augmentation appears, the user can tap on the
 - **ARTutor** icon and utter a command







• Tap on the ARTutor icon initiates speech recognition

 To differentiate between commands and questions, the user needs to utter the word "Question" before formulating the question

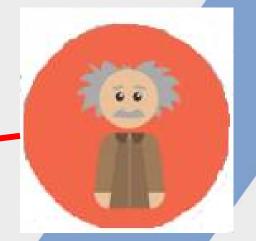




• The question is sent to the server and the terms are searched in the PDF

 When a match is found, the sentence containing the terms is returned to the device, and is displayed on the screen and pronounced using the Text To Speech function











Creating augmentations
Displaying augmentations
Voice commands
Q&A system

Advanced Educational Technologies & Mobile Applications Lab





Book creation

> **ET** MA





Current developments ...



Information retrieval algorithm

- Handle natural language questions
- Improve search results

Book searching and downloading portal
Browsing available books
Downloading books for printing





Conclusions



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ARTutor and Moodle

- The authoring tool can be a <u>Moodle activity</u>
- Augmented books
 - Developed by the teacher or the students.
 - Shared access with students participating in the course
 - Collaborative development of the augmented book



Conclusions



ARTutor and Moodle So the end user will be immersed in the Moodle and

Advanced Educational Technolog Mobile Applications Lab Model itself will fly to another level!





K K

AETMA team

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Thank you

Tomorrow's illiterate *will not be the man who can't read*; he will be the man who has not learned how to learn." (Toffler 1971)

Advanced Educational Technologies & Mobile Applications Lab

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