The ARLearn toolkit for mobile serious games and field-trips

dr. Stefaan Ternier
Open University of the Netherlands
Smartphones
are too often
considered toys,
not useful for learning
Another view on smartphones
Smartphone = mobile devices + sensors
camera + network
camera + network
microphone + network
microphone + network

- Real environment
  - enriched with virtual objects
- Virtual environment
  - enriched with virtual objects
Augmented Reality

= camera + gps + accelerometer
Augmented Reality: Locatory
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Augmented Reality: Locatory
Augmented Reality: Locatory
Augmented Reality: Locatory

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Augmented Reality: Locatory
Senses

- sight
- hearing
- taste
- smell
- touch
- balance
- ....
ARLearn: hearing

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ARLearn: hearing

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ARLearn Architecture

- Serious game engine
  - Score
  - Progress
  - Team play
- Android and streetview clients
- Excursions possible
- Notification framework
- Rich media: video, audio, multiplechoice questions, ...
- Location based assignments and triggers Media
Lifecycle of a media item

Invisible

dependsOn

visible

disappearOn

Invisible
ARLearn dependency model

- **Dependency**
  - **TimeDependency**
    - offset : Dependency
    - timeDelta : long
  - **ActionDependency**
    - action : string
    - scope : string
    - generalItemld : string
  - **AndDependency**
    - deps : Dependency[]
  - **OrDependency**
    - deps : Dependency[]
# ARLearn Case studies

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Cultural Science Fieldtrip in Florence

Op bijgaande tekening kun je zien hoe Brunelleschi's ontwerp voltooid had moeten worden. Bedenk dat de geleding ervan 'klassiek' wordt genoemd; hoe uit zich dit dan?

Maak van deze hoek zo goed mogelijk een foto en spreek in vijftig woorden in hoe hij de hele gevel heeft geleed.
Lessons Learned

- Choose a location for fieldwork with proper GPS reception
  - High buildings, narrow streets :(
- Reserve time for users to make themselves acquainted with the smartphone
- Battery life ~ GPS/network operations
- Balance between automatic start and manual start of audiofragments.
Hostage Simulation: Real World Training for critical situations
Roles / teams

Head of Office - Security Officer - Staff Welfare

a role is performed by a small group with smartphone.

advance organizer for real drill

take decisions / collaborate
After informing your country's Representative, what do you do next?

- Make contact with the hostage takers to find out the demands
- Liaise with other UNHCR staff to establish when, where and why the hostage was taken.
Streetlearn: ARLearn streetview client

- cultural heritage case: Amsterdamse grachtengordel
- Unesco site with 100% google streetview coverage
- storyboard based on real historic event: smuggling marihuana from Libanon in early 1970s
- Player takes role of Ada Jobse, a police officer
Streetlearn: ARLearn streetview client

Architecture of the gallery

A visitor in the gallery is proud of her knowledge about the debate over the architecture of this building. She says, that a famous architect state: "Hier wil ik geen discussie over hebben, dit ontwerp keur ik zonder meer goed". But she forgot who it was. Can you help?

From which architect was the quote?

A. ☐ F.J. Dupont
B. ☐ A. Bodon
C. ☐ J.F. Staal

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