



Proširena stvarnost - Augmented Reality (AR)

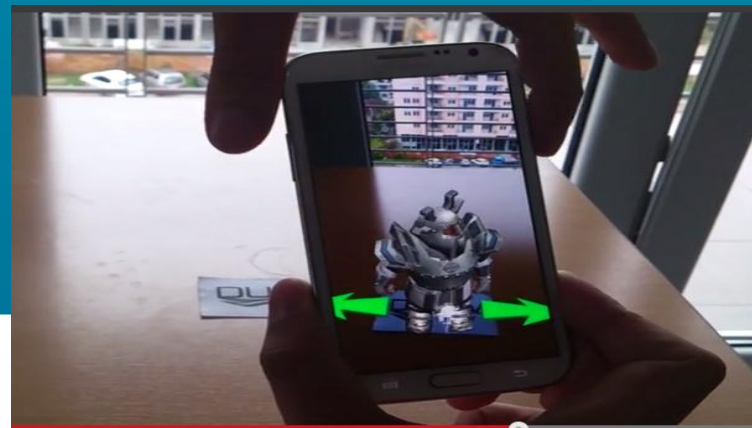
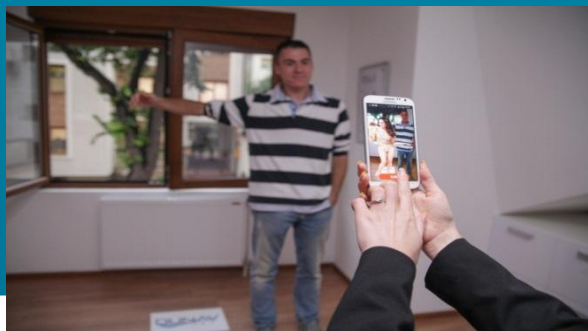
Dr Nenad Gligorić

Šta je Augmented Reality?

- Termin Augmented Reality prvi put se pominje 1990 od strane istraživača u Boingu
- Augmented Rality su nazivali aplikaciju koji su nosili tehničari da bi im prilikom popravki bio vidljiv raspored kablova na ekranu

Šta je Augmented Reality?

- ...je stvaran (realan) svet proširen sa kompjuterski generisanim podacima i objektima..



Šta je Augmented Reality?



Belgrade, Serbia

Saturday
Partly Cloudy



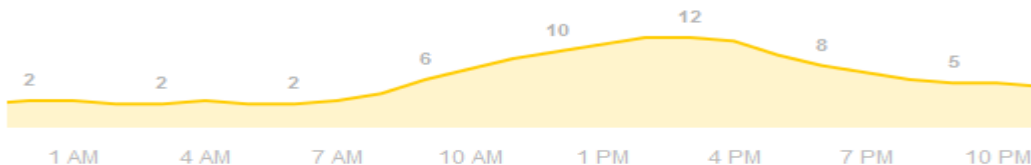
13 °C | °F

Precipitation: 0%
Humidity: 57%
Wind: 16 km/h

Temperature

Precipitation

Wind



1 AM

4 AM

7 AM

10 AM

1 PM

4 PM

7 PM

10 PM

Thu

Fri

Sat

Sun

Mon

Tue

Wed

Thu



6° -2°



9° 1°



13° 3°



9° 4°



9° 3°



13° 6°



8° 4°



8° 4°

Primena

- 2.1 Archaeology
- 2.2 Architecture
- 2.3 Art
- 2.4 Commerce
- 2.5 Construction
- 2.6 Education
- 2.7 Search and rescue
- 2.8 Everyday
- 2.9 Gaming
- 2.10 Industrial design
- 2.11 Medical
- 2.12 Beauty
- 2.13 Spatial immersion and interaction
- 3.1 Military
- 3.2 Navigation
- 3.3 Office workplace
- 3.4 Sports and entertainment
- 3.5 Task support
- 3.6 Television
- 3.7 Tourism and sightseeing
- 3.8 Translation

Marker based 2D model – orthogonal position marker dependent after triggering



ARfie Marker based 2D model – parallel position marker dependent after triggering

Subotica this is me



Marker



Marker

СУБ♥ТИЦА
mo sam ja!
SZA♥ADKA
en vagyok!
SUBOTIC♥
fo sam ja!

Marker triggered 2D model – content fixed on screen
not marker dependent after triggering

Researcher Night



Marker

Markerless 2D model – content fixed on screen

I drink wine



Markerless 2D model – content fixed on screen
selection among different 2D models available

[Kombank Arena Fan](#)



ARfie

Marker triggered 2D model – content fixed on screen
selection among different 2D models available
not marker dependent after triggering

Ariel



Marker

ARfie

Markerless 2D model – content fixed on screen (frame)

+ Marker based 2D model - parallel position

marker dependent after triggering

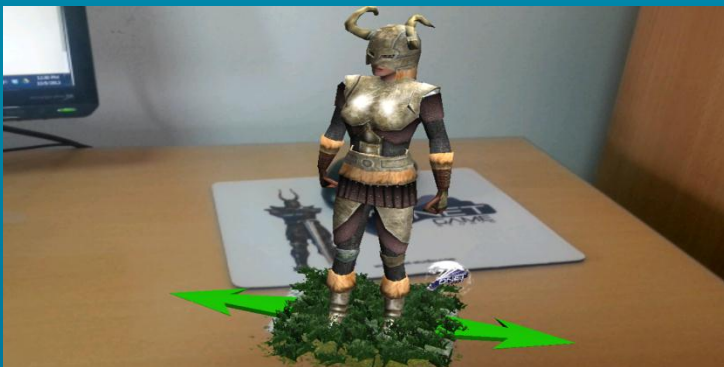
Lion Group



Marker

Marker triggered 3D model with or without animation –
marker dependent after triggering

DunavNET AR



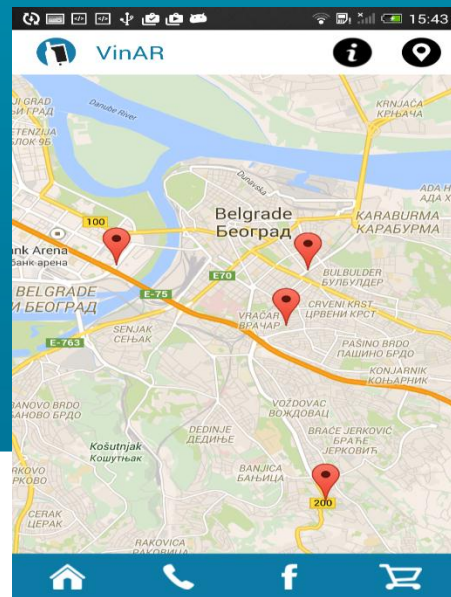
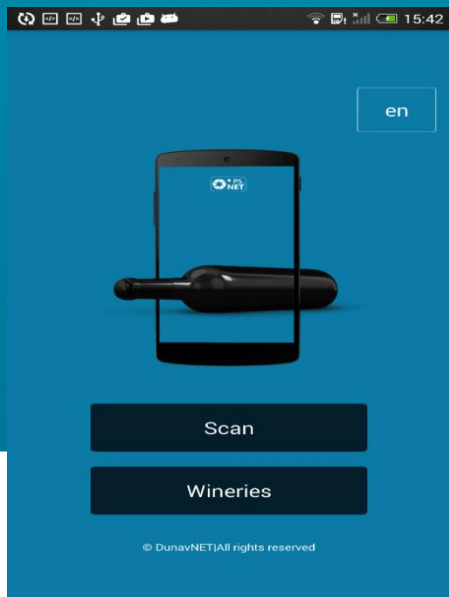
DUNAV
NET

Marker

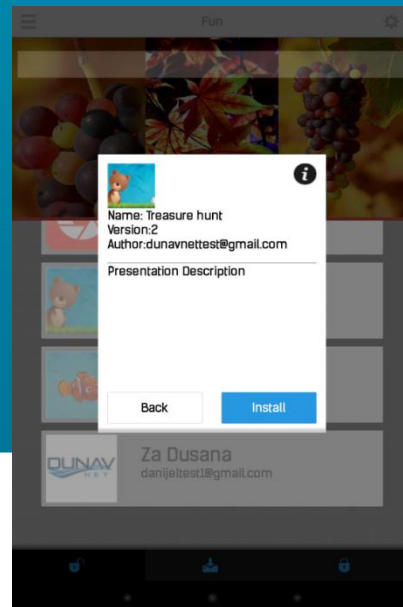
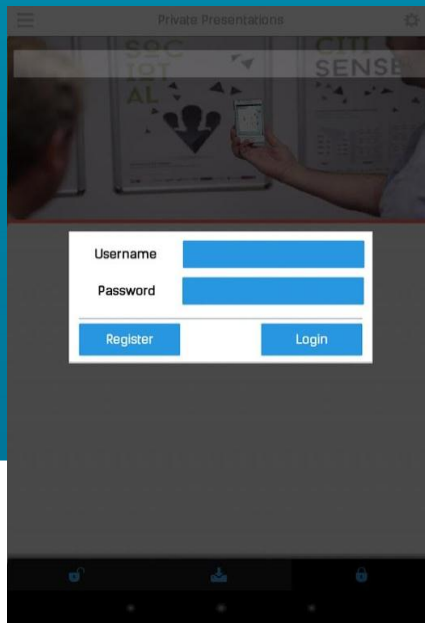
AR Custom Apps for Wines

List of wineries, wine information, wine selling points, wine ordering option, AR recognition of wine labels

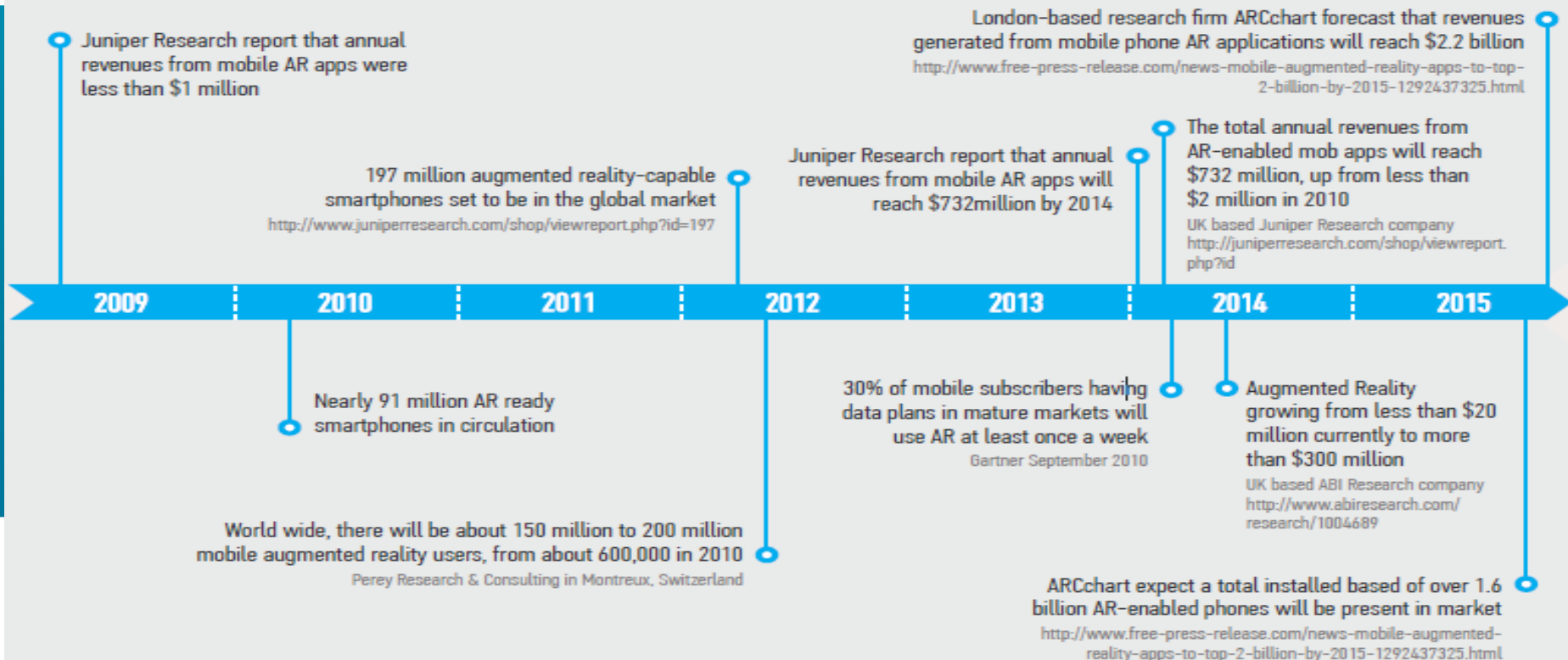
[vinAR](#)



Alat koji omogućava brzo i jednostavno kreiranje AR aplikacija za različite platforme



AUGMENTED REALITY ON THE MOVE...



Šta je sledeće?



Google naočare

- Trenutno u beta fazi.
- Pomeranje informacije sadržane u pametnom telefonu u realan svet.



Šta je sledeće?



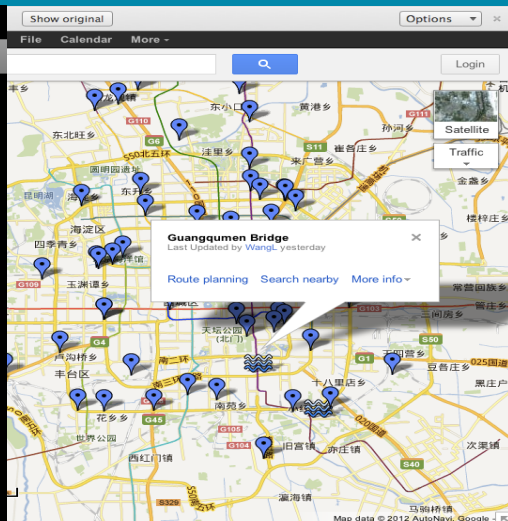
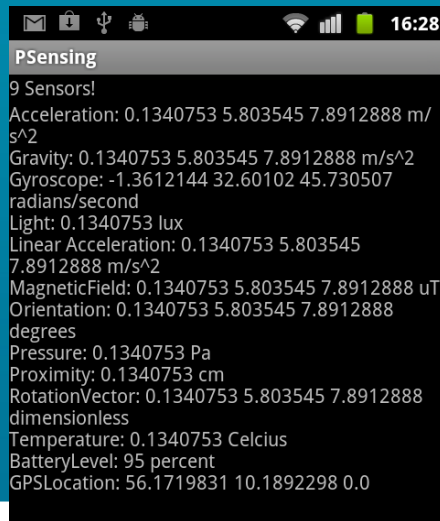
Digital head

New York University
photography professor Wafaa
Bilal displays the digital camera
mount implanted in the back
of his head in December 2010.
Images from his camera have
been streamed over the
Internet, but Bilal's body has
had problems accepting the
implant. REUTERS/Leslie

Šta je sledeće?

Acceleration
Gravity
Gyroscope
Light
Linear acceleration
Magnetic field
Orientation
Pressure
Microphone

Magnetic field
Orientation
Pressure
Proximity
Rotation
Temperature
Battery level
GPS location
Camera



...crowdsourcing

Šta je sledeće i šta su prepreke?

Šta je sledeće:

- Google Glass + FB = Augmented Reality društvena merža?
- Google Glass + Digital Head = ?
- What's your match?

Kako:

- Algoritmi za mašinsko učenje
- Veliki broj konteksta koji se detektuje
- Internet of things

Prepreke:

- Nedostatak algoritama
- Privatnost
- Cena uređaja (Google Glass ~ 2000E)

Terminator, 1984

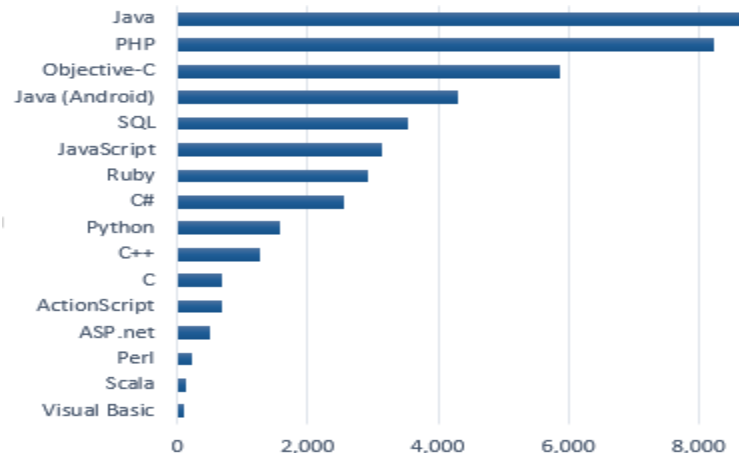


A gde sam tu ja?

WHAT IS IN IT FOR ME?

Potražnja tržišta

- Sveto trojstvo (najtraženiji) Php, Java, C# (.NET) u Srbiji
- Baze podataka, web servisi
- 2 načina:
 - Nauči sam
 - Nauči sam
- Odakle?
 - Skripte, knjige, fakultet, tutorijali, obuke, kursevi



Obuke

- Hackathons
- senZations'15 summer school
 - <http://senzations.net/>
 - Ove godine održava se u Beogradu (početak septembra)
 - SocioTal Hakaton (nagradni fond 15000 EUR)
 - Rad sa "IoT hardverom" i programiranje

SOCIOTAL

Title: SOCIOTAL

Proposal Number: 609112

Duration: 36 months

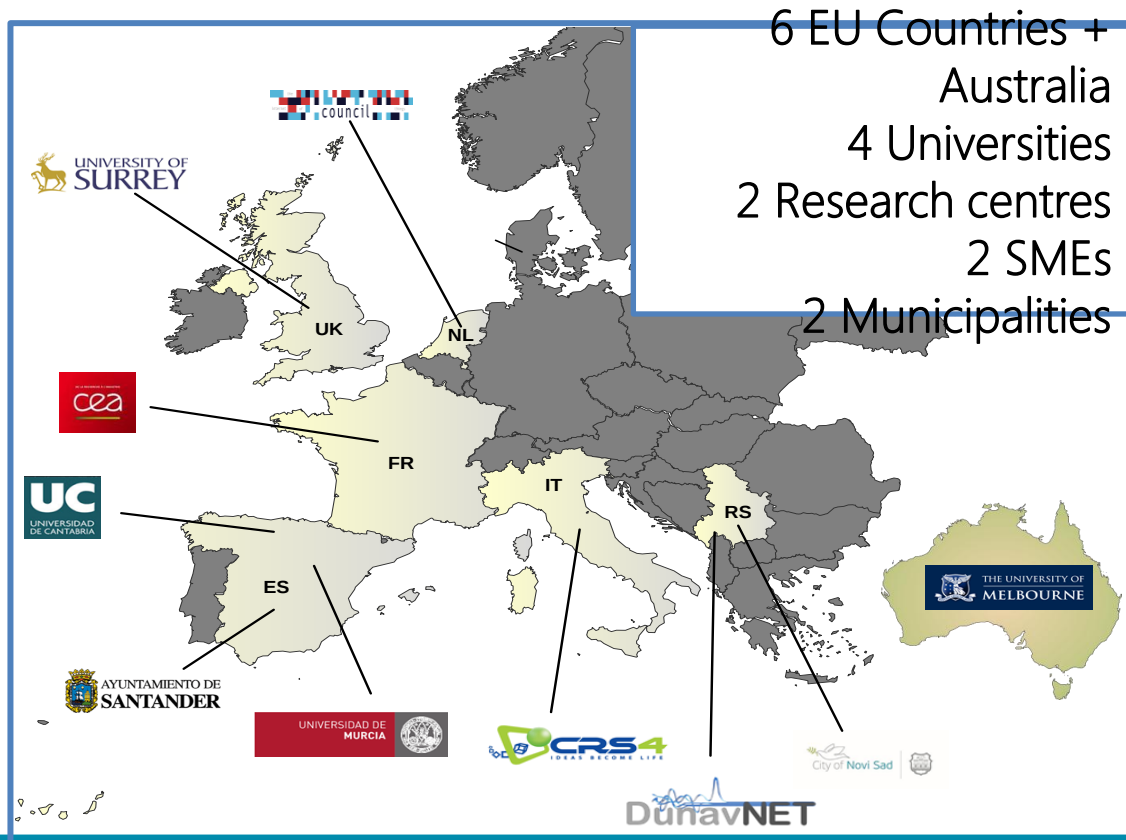
Person effort: 327 PM

Total costs: 3.687.867 €

EC contribution: 2.811.000 €

Coordinator:

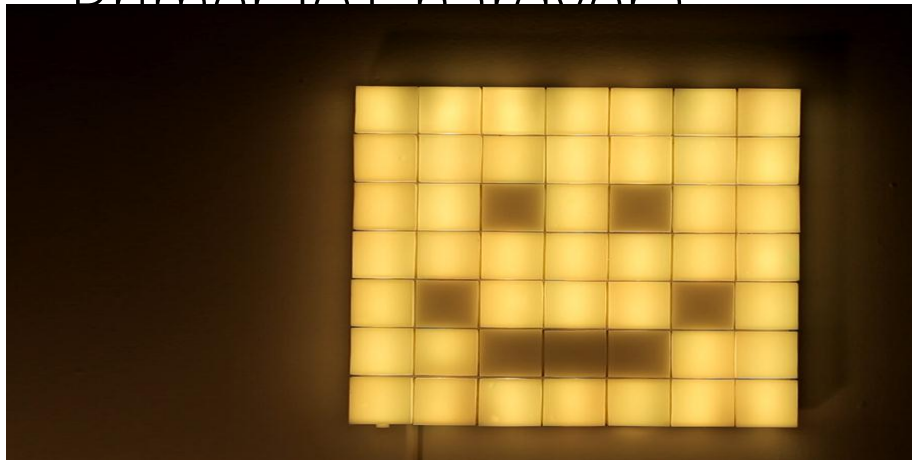
Dr Alexander Gluhak,
University of Surrey



IoT Lampa

- City “mood meter” & elevator supervisor

Primer IoT hardware



FP7 SOCIOTAL - <http://www.sociotal.eu>

HVALA NA PAŽNJI

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