

LABORATORIO DI REALTÀ AUMENTATA

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Università degli Studi di Udine
Corso di Laurea in Scienze e Tecnologie Multimediali



Introduction

About the teacher

- Claudio PICIARELLI
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About the course

- STM a.a. 2020/2021: **Laboratorio** di realtà aumentata, 6 CFU (42h)

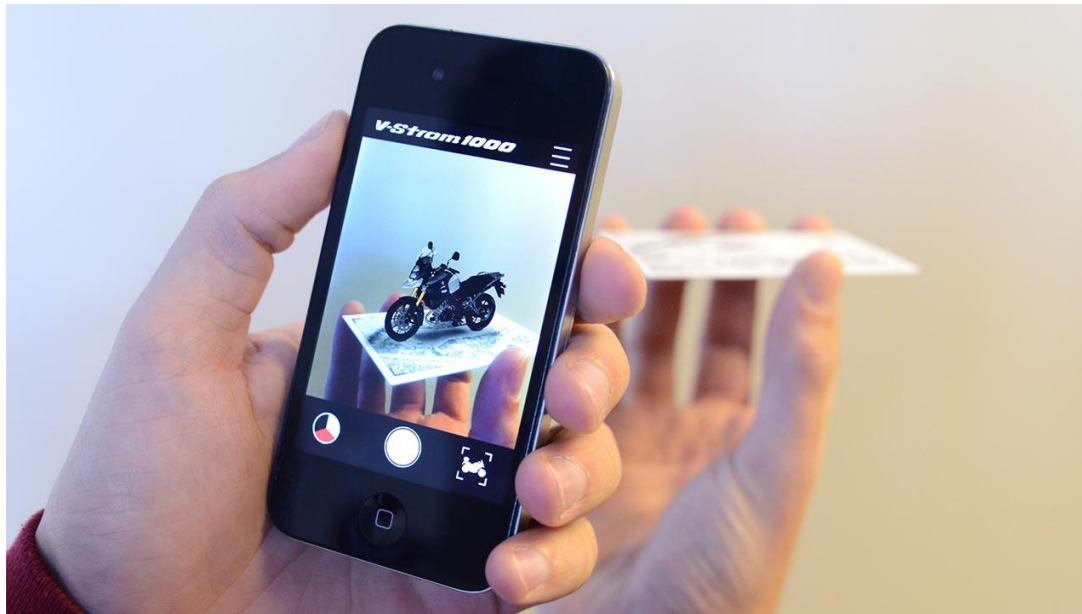
- Schedule:
 - ▣ every Tuesday afternoon, 11 weeks (ideally)
 - ▣ Official schedule:
 - 14:00 – 18:00
 - ▣ What about breaks?
 - 14:00 – 15:30
 - 15:45 – 17:15

Resources

- You'll find everything you need on the e-learning university website: <http://elearning.uniud.it>
 - ▣ PDF version of the PowerPoint presentations
 - ▣ Auxiliary files & online resources
 - ▣ Important communications
 - ▣ ...
- Lessons are recorded and stored on Teams
- Note: slides are in English, oral lessons in Italian
- Please do not share slides without author's consent

Goals

- To learn the basic concepts of Augmented Reality and its applications. To develop an AR project using only standard technologies such a web browser.



Prerequisites

- A very basic knowledge of JavaScript is required (in particular, event handling)
- Can you understand this code?

```
<!doctype html>
<html>
<head>
  <title>Prova</title>
  <script>
    var video;
    window.onload = function() {
      video = document.getElementById("myvideo");
    }
    myplay = function() { video.play(); }
  </script>
</head>
<body>
  <video controls id="myvideo">
    <source src="marker.webm" type="video/webm">
    <source src="marker.mp4" type="video/mp4">
  </video>
  <menu>
    <button type="button" onclick="myplay()">Play</button>
  </menu>
</body>
</html>
```

Topics

- First part: short introduction to basic AR concepts. What's the difference between AR and VR? AR applications
- Second part: Technologies for AR applications in a browser: WebRTC, WebGL, JsARToolkit...
- Third part: Putting the pieces together: a simple web-based AR application

Final exam



- 5 exam sessions
- written exam (5 questions, 45 min/1 hour. Theory + at least one exercise on matrices)
 - ▣ online?
- Optional project ([0..3] increment range)