# Visual Computing and Communication

*University of Trento*

NICOLA CONCI

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## SPECIALIZATION – Computer Vision and Multimedia Analysis

- Objective is bridging the gap between Signal Processing technologies applied to multimedia data and
    - Media Analysis
    - Pattern Recognition
    - Knowledge Representation

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# INTERNSHIPS

Tight connection with local startups, companies, and research centers for internships, including

**Arcoda**
Information Technology

**ÛhoPPer**
(mobile computing and data analytics)

**Electrolux**

**POINT GREY**
Innovation in Imaging

**CRF** CENTRO RICERCHE FIAT

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# TOPICS FOR THESES

- Computer vision for:
  - Sport Analytics
  - Retail Analytics (gender recognition, re-identification)
  - Video surveillance (crowd monitoring)
- Computer graphics for:
  - Crowd simulation
  - Augmented reality/Virtual Reality

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# Outcome of the thesis (first exit student)
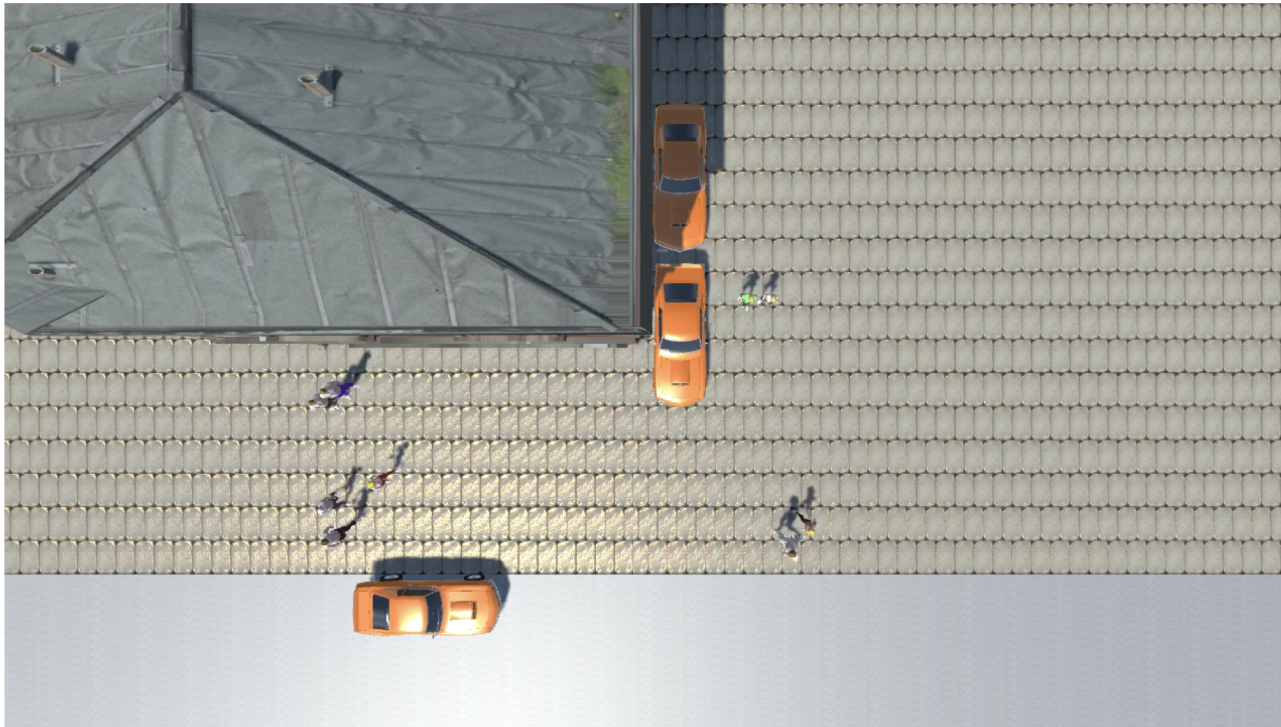


**Zohaib Hassan**

Use of neural networks (GANs) to predict and simulate crowd behaviors

(Paper in preparation)

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# Last year's records

- ## 5 entry students
  - for the Project Course on Computer Graphics, we hosted a visiting lecturer. All students satisfied and they conducted a project simulating the solar system.
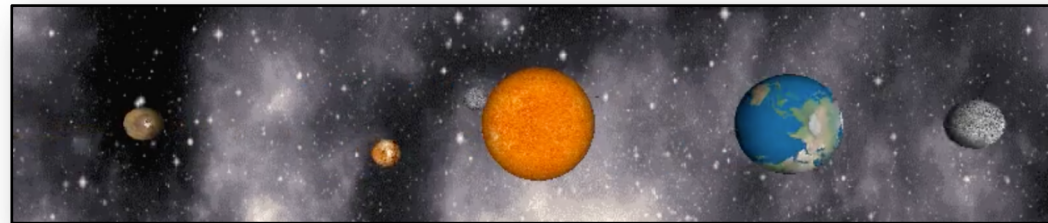


- ## 2 exit students
  - Internship @Electrolux: IoT/food
  - Internship @FBK: 3D

# ENTRY POINT

## Goal is to provide basic knowledge that can be useful in all exits

1st Semester

| Course | ECTS |
|---|---|
| Digital Signal Processing | 9 |
| Innovation and Entrepreneurship Basic | 6 |
| Multimedia Data Security | 6 |
| Network Modeling and Design | 6 |

2nd Semester

| Course | ECTS |
|---|---|
| Recognition Systems | 9 |
| Business Development Lab | 9 |
| ICT Innovation | 9 |
| Project course on Computer Graphics | 6 |
| Project course on Service design and Engineering | 6 |

# EXIT POINT

**1st Semester**

| Course | ECTS |
|---|---|
| Computer Vision | 6 |
| Multisensory Interactive Systems | 6 |
| Innovation and Entrepreneurship Studies in ICT | 6 |
| Elective course* | 6 |

**2nd Semester**

| Course | ECTS |
|---|---|
| Elective course* | 6 |
| Thesis | 30 |

*) choose between: - Data Mining
- Knowledge and Data Integration
- Introduction to Computer and Network Security
- Industrial Trends in Communications
- Affective Computing

# Local coordinator

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# THANK YOU

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