



**PhD in Information Technology and Electrical Engineering**

**Università degli Studi di Napoli Federico II**

**PhD Student: Dario Di Mauro**

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**XXX Cycle**

**Training and Research Activities Report – Second Year**

**Tutor: Francesco Cutugno**



## 1. Information

Dario Di Mauro obtained a master degree in Computer Science in July 2013 at University of Naples “Federico II”. He is currently a PhD student, XXX cycle in the same University, with a fellowship founded by Fondo Sociale Europeo, P.O. Campania 2007/2013-2014/2020. His tutor is **Francesco Cutugno**.

## 2. Study and Training activities

His studies are mainly focused on Human-Computer Interaction and Interaction representation in Intelligent Environments.

He attended the following modules:

- Multi-agent systems, Silvia Rossi
- Communicating and Disseminating your Research work, Mo Mansouri
- Scientific Writing, Chie Shin Fraser
- Scientific Writing, Paolo Russo

In these courses, he learnt known approaches to develop architectures with multiple interacting entities and how to effectively approach the research.

He attended also the following seminars:

- Beyond the data
- Memory technologies for Android based systems
- Predictable real-time embedded control systems
- Test and Diagnosis of Integrated circuits
- Hardware security and Trust
- Radar adaptivity: antenna based signal processing technique
- Perception-based surround sound recording and Reproduction

## 3. Research Activity

Dario Di Mauro is developing **a framework to support multiple levels of interaction**.

The primary goal was to define a new language of communication between humans and machines. The framework, Phaser, is now able to interact with users recurring to Natural User Interfaces, in a network of intelligent devices, where each device is an instance of Phaser. The network is designed by an expert of considered domains, but the system adapts its topology considering the actual use.

As two domains are considered, smart-houses and smart-museums, Dario is collaborating with Prof. Juan Augusto, Middlesex University, about interaction in smart-houses and museum curators to design interacting exhibits in smart-museums.

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## 4. Products

During the second year, Dario Di Mauro produced the following papers:

- Di Mauro, Calandra, Origlia, Cutugno, *PaSt: Human tracking and gesture recognition for flexible virtual environments management* (AVR 2016)
- Calandra, Di Mauro, Cutugno, Di Martino, *Navigating Wall-sized display with gaze: a proposal for Cultural Heritage* (AVI-CH 2016)
- Di Mauro, Cutugno, *A framework to support multiple levels of Interaction* (IE 2016)
- Origlia, Chiacchio, Di Mauro, Cutugno, *Why so serious? Raising curiosity towards cultural heritage with playful games* (AI\*CH 2016) [accepted]

Di Mauro is currently working on Virtual assistants for elderly people in smart houses.

## 5. Conferences and Seminars

During his second year, Di Mauro attended the following workshop:

- First Workshop on Advanced Visual Interfaces for Cultural Heritage, AVI-CH 2016, Bari

And presented on the the following conferences:

- International Conference on Augmented Reality, Virtual Reality and Computer Graphics, AVR 2016, Otranto
- Doctoral Colloquium, Intelligent Environments, IE 2016, London

## 6. Activity abroad

Dario Di Mauro is currently on his period abroad. It started on the 19<sup>th</sup> of September 2016 up to the 28<sup>th</sup> of February 2017. He is at Middlesex University, London, collaborating with prof. Juan Augusto. He is currently working on Virtual Assistants for Elderly people in smart houses.

Student: Dario Di Mauro <a href="mailto:dario.dimauro@unina.it">dario.dimauro@unina.it</a>		Tutor: Francesco Cutugno <a href="mailto:cutugno@unina.it">cutugno@unina.it</a>		Cycle XXX																						
	Credits year 1							Credits year 2							Credits year 3							Total	Check			
	Estimated	1	2	3	4	5	6	Summary	Estimated	1	2	3	4	5	6	Summary	Estimated	1	2	3	4			5	6	Summary
Modules	20	0	2	0	4	0	6	12	10	0	3	2	3	0	5	13	21							0	25	30-70
Seminars	8	0	1,1	0,3	0,8	0	2	4,2	6	6,7	0,7	0	0	0	0	7,4	12							0	12	10-30
Research	32	7	6	8	8	8	7	44	45	4	6	7	11	6	11	45	30							0	89	80-140
	60	7	9,1	8,3	13	8	15	60	61	11	9,7	9	14	6	16	65	63	0	0	0	0	0	0	0	126	180