INdAM Marie-Curie COFUND Final Report

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This is the final report of my fellowship. It shows:

- a very high publication output at top conferences (including a best-paper award).
- advancement of career objectives (including organising committees, program committes, chairing committees, new and close collaborations within Italy and internationally, supervision of students).
- completion of most of my fellowship research goals.

Publication Output

The topic of my fellowship is at the intersection of two fields of computer science: formal methods (FM) (verification, synthesis, etc.) and artificial intelligence (AI).

Based on the work during my fellowship:

- I published 5 CORE A* conference papers in 2017 [13, 15, 18, 11, 12]
- I published 5 CORE A* conference papers in 2016 [17, 1, 6, 5, 7].
- I won a best-paper award [4].
- I published the following journal papers [8, 2] and an invited note in SIGACT news [14].

The quality and quantity of this output has exceeded my expectations.

Career Objectives

The following table shows my Chair, PC, Organiser, Editor, Reviewing and Invited Talks since the start of my fellowship.

Role	Year	Venue	Details
Chair	2017	ICTCS	Italian Conference on Theoretical Computer Science
Chair	2017	SR	International Workshop on Strategic reasoning
Organiser	2017	ICTCS	Italian Conference on Theoretical Computer Science
Organiser	2017	CILC	Italian Conference on Computational Logic
Organiser	2017	FMAI	Workshop on Formal Methods in AI
PC	2018	SR	International Workshop on Strategic reasoning
PC	2018	AAMAS	Intl. Conf. on Autonomous Agents and Multi-agent Systems
PC	2018	AAAI	AAAI Conference on Artificial Intelligence
PC	2017	IJCAI	International Joint Conference on Artificial Intelligence
PC	2017	AAAI	AAAI Conference on Artificial Intelligence
PC	2016	SR	International Workshop of Strategic Reasoning
PC	2016	GandALF	Intl. Symp. on Games, Automata, Logics and Formal Verification
PC	2016	ECAI	European Conference on Artificial Intelligence
Editor	2017	CEUR-WS	Joint proceedings of ICTCS 2017 and CILC 2017
Guest Editor	2017	I&C	Special issue of SR 2017
Guest Editor	2017	TCS	Special issue of ICTCS 2017 and CILC 2017
Reviewing	2017	IRC	External reviewer for Icelandic Research Fund
Invited Talk	2017	Robolog, Rennes	Workshop on Robotics and Logic
Invited Talk	2017	FMAI, Naples	Workshop on Formal Methods in AI

Collaborations and supervisions

During this time I created collaborations locally and internationally:

1. Giuseppe De Giacomo (Sapienza, Italy),
2. Michael Wooldridge (Oxford, UK) and Alessio Lomuscio (Imperial, UK).
3. Hector Geffner (UPF, Spain)
4. Blai Bonet (USB, Venezuela)

I continued working with my former colleagues in Vienna, strengthening the ties between my host's group and my old group [3, 9, 6, 10].

I co-supervised two students: Paolo Lambiase (undergraduate student, UNINA) and Aurele Barriere (Msc intern). We are writing up this work at present.

Fellowship Research Objectives

Here is the status of the research objectives:

- Objective 1: completed [19, 4, 5].
- Objective 2: verification part completed [19, 4, 5], synthesis part initiated [17, 16, 15]. For the latter I gave foundational results about synthesis in a parameterised environment but did not yet apply it to robot protocols in particular.
- Objective 3: not completed. This objective was speculative. Although I still believe there is scope for interesting research there, I did not have time to pursue it seriously.

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