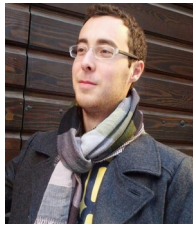


PERSONAL INFORMATION



Federico Magliani

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 <http://magliani.altervista.org>

Sex Male | Date of birth 20/02/1992 | Nationality Italian

POSITION

Postdoctoral Researcher

16/12/2019–Present

Postdoctoral Researcher

Università degli Studi di Modena e Reggio Emilia
Via Giovanni Battista Piranesi,1 42122 Reggio Emilia (Italy)

I'm working on computer vision algorithms for automation and robotics.
I joined the ARS Control lab and my supervisor is Full Prof. Cesare Fantuzzi.

01/11/2019–15/12/2019

Computer Vision Engineer

Industria Tecnologica Italiana
Via Giovanni Battista Piranesi,1 42122 Reggio Emilia (Italy)

I worked on a computer vision project, supported by Reggio Emilia Chamber of Commerce.
In particular, I developed a software pipeline, using OpenCV for python, for automatic defects classification in cheese x-ray images. The objective of this project, in collaboration with Salchim, was to improve and automate the evaluation method of hard cheese forms that currently is made by few trained humans.

01/11/2016–31/10/2019

PhD Student

Università degli Studi di Parma
Parco Area delle Scienze, 181/A, 43124 Parma (Italy)

My principal research interest was Computer Vision, particularly on Content-Based Image Retrieval (CBIR).

I worked with CNNs, exploiting transfer learning and applying fine-tuning in order to improve final accuracy in retrieval. My focus switched on large-scale retrieval, trying to reduce the retrieval time, but maintaining high retrieval performance. I proposed a new indexing method called Bag of Indexes (BoI) based on LSH projections. I was also interested to attention/saliency methods for image retrieval purposes.

The PhD was funded by Regione Emilia Romagna under the "Piano triennale alte competenze per la ricerca, il trasferimento tecnologico e l'imprenditorialità".

My supervisor Prof., during my PhD, was Andrea Prati.

01/09/2018–31/01/2019

Visiting Student Researcher

Dublin City University, Dublin (Ireland)

I worked on image retrieval exploiting graphs and techniques based on graphs (diffusion) in order to improve final accuracy of retrieval systems, but also maintaining small the computational time.

The final objective was to apply these approaches on very large image datasets.

Thanks to the use of hashing techniques I proposed an algorithm for the approximate creation of kNN graphs, that maintains the same retrieval performance after the diffusion application.

My supervisor was the Assistant Professor Kevin McGuinness.

08/03/2017–30/06/2017

Computer Vision Algorithm Engineer

Bridgestone, Roma (Italy)

I worked at the project "Detection of cracks in the tires under effort" in collaboration with University of Parma and Bridgestone Italia. I implemented a MATLAB pipeline for the detection of cracks on tire images. The objective of the project was to identify cracks on tires before they explode.

Instead of trying to identify small cracks, I proposed to identify bigger cracks and make the problem simpler. Finally, my solution reduced the rate of false positive detections with a good true positive rate.

01/09/2014–31/12/2016

Tutor

Università degli Studi di Parma, Parma (Italy)

Assistant professor in lab exercises on "Fundamentals of IT", the first exam of the Bachelor Degree in Computer Engineering.

01/06/2010–30/08/2010

IT Technician

CCPL sc, Reggio Emilia (Italy)

During my stage I worked in direct contact with users, helping them in:

- Maintenance of computers and servers
- Help desk (printers, phones).

EDUCATION AND TRAINING

01/10/2014–14/10/2016

Master's Degree in Computer Engineering

EQF level 7

Università degli Studi di Parma, Parma (Italy)

The main subjects were:

- Artificial intelligence: fuzzy logic, neural networks.
- Computer vision: segmentation, edge detection, classification.

During this period I realised with other colleagues an interesting research on preprocessing in Sentiment Analysis of Twttier data. It was so appreciated that we wrote a paper for a conference. The code, written in Python, used for the experiments is available on my [GitHub](#).

My thesis is an experimental research on Natural Language Processing (NLP). I tried to use a Deep Learning approach.

The title of my thesis was "Development and analysis of a deep learning application to Sentiment Analysis". My supervisor was Prof. Monica Mordonini and the assistant supervisors were Prof. Stefano Cagnoni and the PhD student Paolo Fornacciari.

The degree mark was 109/110.

01/10/2011–15/07/2014

Bachelor's Degree in Computer Engineering

EQF level 6

Università degli Studi di Parma, Parma (Italy)

The main subjects are:

- Principles of electronics (analog and digital)
- Programming languages (C, C++, Python, Java)
- Database for web-app (SQL, HTML, PHP)
- Operating system's working and programming.

The title of my thesis was: "Integration and experimental evaluation of peer-to-peer applications for sensor data sharing with Intel Galileo boards". My supervisor was Prof. Francesco Zanichelli and the assistant supervisors were the PhD students Alessandro Grazioli and Giacomo Brambilla.

The degree mark was 110/110 cum laude.

09/2005–07/2011

Diploma Technical School

EQF level 5

I.S.S. Blaise Pascal, Reggio Emilia (Italy)

During this period I studied, besides maths, economics, philosophy, the basis of IT, analogic and digital electronics, and the logic behind the programming.

The final votation was 96/100.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	C1	B2	B2	B2
French	A2	A2	A2	A2	A2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills

Excellent contact skills with poor people and children gained through my pluriannual experience as Caritas' volunteer and church's volunteer at summer camp.

Organisational / managerial skills

Good organisational skills because:

- I completed many web-site for little companies
- I organised many party in my birthplace with the help of the association to which I belong.

Job-related skills

I was responsible for the training in scientific subjects for a couple of students (school tuition).

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Digital competences - Self-assessment grid

Driving licence B

ADDITIONAL INFORMATION

Publications - Workshops

Angiani, G., Ferrari, L., Fontanini, T., Fornacciari, P., Iotti, E., Magliani, F., & Manicardi, S. (2016). A Comparison between Preprocessing Techniques for Sentiment Analysis in Twitter. *International Workshop on Knowledge Discovery on the Web*.

Publications - Conferences

Magliani, F., Bidgoli, N. M., & Prati, A. (2017, September). A location-aware embedding technique for

accurate landmark recognition. In *Proceedings of the 11th International Conference on Distributed Smart Cameras* (pp. 9-14). ACM.

Magliani, F., & Prati, A. (2018, September). An accurate retrieval through R-MAC+ descriptors for landmark recognition. In *Proceedings of the 12th International Conference on Distributed Smart Cameras* (p. 6). ACM.

Magliani, F., Fontanini, T., & Prati, A. (2018, November). Efficient Nearest Neighbors Search for Large-Scale Landmark Recognition. In *International Symposium on Visual Computing* (pp. 541-551). Springer, Cham.

Magliani, F., Fontanini, T., & Prati, A. (2018, November). A Dense-Depth Representation for VLAD Descriptors in Content-Based Image Retrieval. In *International Symposium on Visual Computing* (pp. 662-671). Springer, Cham.

Magliani F., McGuinness K., Moledano E. & Prati A. (2019). An Efficient Approximate kNN Graph Method for Diffusion on Image Retrieval. *International Conference on Image Analysis and Processing*

Magliani, F., Sani L., Cagnoni S. & Prati, A. (2019, September). Genetic Algorithms for the Optimization of Diffusion Parameters in Content-Based Image Retrieval. In *Proceedings of the 13th International Conference on Distributed Smart Cameras* (under review)

Publications - Journals

Magliani F., Fontanini T., & Prati A. (2019). Bag of Indexes: a Multi-Index Scheme for Efficient Approximate Nearest Neighbor Search. *Multimedia Tools and Applications* (under review)

Publications – Book Chapters

Magliani, F., Fontanini, T., & Prati, A. (2019). Landmark Recognition: From Small-Scale to Large-Scale Retrieval. In *Recent Advances in Computer Vision* (pp. 237-259). Springer, Cham.

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