

# Curriculum Vitæ et Studiorum

Davide Spataro

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## **Indice**

# 1 Personal information and research activity

## 1.1 Personal information

**Name and surname:** Davide Spataro  
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## 1.2 Current position

Tutor of Fundamentals of Computer Science and Object-Oriented Programming at the Department of Mathematics and Computer Science, University of Calabria, Italy.

## 1.3 Research interests

Parallel Computing (GPGPU Computing, OpenMP, MPI, OpenACC, CUDA), Parallel Computational Paradigms (Cellular Automata), Discrete Modeling and Simulation, Scientific Visualization (Computer Graphics, Real-time rendering), Mobile developing (Android).

## 1.4 Research activity

Starting from my MSc degree Thesis, I am collaborating with researchers from the University of Calabria (Italy) and from the Plymouth University (UK) to studies on **Parallel Computing, Modeling and Simulations** in Computational Fluid Dynamics, and **Scientific Visualization**.

In particular, in the **modelling and simulating field** I exploit the computational power of Cellular Automata to model complex natural phenomena.

In the context of **Parallel Computing** my research focuses mainly on CUDA (besides MPI, OpenMP, OpenACC) application to accelerate complex systems models (e.g. simultaneous Cellular Automata models simulations).

## 1.5 Short Biography

I come from Nicotera, Calabria (Southern Italy). In 2008 I moved to Cosenza, city in which actually i live, study and work.

In 2011, I obtained my Bachelor of Science in Computer Science at the University of Calabria.

In 2014, I completed a Master of Science (**summa cum laude**) at the University of Calabria.

# 2 Education

## 2.1 University education

**Master of Science in Computer Science.** I obtained the MSc degree in Computer Science (**summa cum laude**) on **July 2014** at the University of Calabria.

**Thesis title:** Accelerating the new SCIARA-fv3 numerical model by different GPGPU strategies.

**Thesis Supervisors:** Prof. William Spataro, Prof. Donato D'Ambrosio

During the two-year degree the main courses I attended and exams taken are listed below:

Data Warehousing and Data Mining, Knowledge Management, Modeling and Simulation, Numerical Approximation and Algorithms, Network and Computer Security, Parallel Algorithms and Distributed Systems, Theoretical Computer Science, Intelligent Systems, Cryptography and Coding Theory.

**Bachelor of Science in Computer Science.** I obtained the BSc degree in Computer Science on **December 2011** at the University of Calabria.

**Thesis title:** B-finder a system for automatic detection of buildings from aerophotogrammetries.

**Thesis Supervisors:** Prof. Pasquale Rullo, Prof. Salvatore Iiritano

During the three-year degree the main courses I attended and exams taken are listed below:

Analysis, Discrete Mathematics, Integral Calculus, Physics, Operations Research, Probability Theory and Statistics, Computer Architecture, Data bases, Object-Oriented Programming, Algorithms and Data Structures, Computer Graphics, Graphical Interfaces and Event-Oriented Programming, Artificial Intelligence, Formal Languages and Compilers, Operating Systems and Networks, Software Engineering, Web based Information systems.

## 3 Research stays

### 3.1 National stays

- From 01/06/2011 to 21/12/2011 I had a **Stage** at Exeura. During the stage period I worked on the development of my BSc Thesis improving my computer vision, MATLAB, and image processing skills.

### 3.2 International stays

- From 01/03/2013 to 31/10/2013 I had a **research visit** at the School of Computing and Mathematics, Plymouth University (UK) under the supervision of the Prof. Davide Marocco. During the visit period I worked on my Thesis by applying GPGPU techniques to the parallelization of the SCIARA-fv3 cellular automata model.

## 4 Publications

- Spataro D., D'Ambrosio D., Filippone G., Spataro W., **Implementation of the SCIARA-fv3 parallel numerical model for lava flow simulation by different GPGPU strategies** *International Journal of High Performance and Applications*. Accepted.
- Spataro W., D'Ambrosio D., Filippone G., Spataro D., G. Iovine, D. Marocco, **Lava flow modeling by the SCIARA-fv3 parallel numerical model**, *Proceedings of The 2014 International Conference on Parallel, Distributed and Network-Based Processing (PDP)*, Turin, Italy, Feb. 12-14, 2014, pp 330-338.
- G. Filippone, R. Parise, D. Spataro, D. D'Ambrosio, R. Rongo, and W. Spataro, **Evolutionary applications to Cellular Automata models for volcano risk mitigation**, *Proceedings of The 2014 International Conference on Workshop on Artificial Life and Evolutionary Computation (WIVACE)*, May 14-15 2014, Vietri sul Mare, Salerno, Italy.