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Roberto Cavicchioli

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WORK EXPERIENCE

28/10/2022 – CURRENT Reggio Emilia, Italy
TENURE-TRACK RESEARCHER UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA, DIPARTIMENTO DI COMUNICAZIONE ED ECONOMIA

I carry out research in the field of neural networks, communication protocols, digital twins for Smart City scenarios. This activity involves the HiPeRT Lab research group of the University of Modena and Reggio Emilia in the context of various research projects, both industrial and public. In this context, I had research, development and supervision tasks for undergraduates, postdocs and PhD students.

01/05/2021 – 27/10/2022 Modena, Italy
UNIVERSITY RESEARCHER UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

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09/2018 – CURRENT Modena, Italy
UNIVERSITY LECTURER UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Adjunct Professor of the Programming I course (72 hours, 9 CFU) at the Department of Physics, Computer Science and Mathematics of the University of Modena and Reggio Emilia, Italy for 3 academic years.

The program developed during the course covered basic topics of programming, Von Neumann architecture, conditional instructions, loops, algorithms in C / C ++.

09/2017 – 07/2019 Modena, Italy
UNIVERSITY LECTURER UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Assistant for the Real Time Embedded Systems course (30 hours, 4 CFU) at the Engineering department of the University of Modena and Reggio Emilia, Italy for 2 academic years.

The program carried out during the course mainly dealt with Real Time Scheduling and its applications to Embedded Systems. The lectures also highlighted practical real-world applications and tools for modeling systems such as Simulink and Matlab.

2012 – 2018 Modena, Italy
UNIVERSITY TEACHING ASSISTANT UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Assistant for the Parallel Programming course (30 hours, 4 CFU) at the Department of Physics, Computer Science and Mathematics of the University of Modena and Reggio Emilia, Italy for 6 academic years.

The program developed during the course deals with an introduction to the different parallel architectures, to the different programming paradigms for shared and distributed memory environments and for massively parallel accelerators. It also explains the use of standard libraries such as MPI, OpenMP and CUDA for NVIDIA GPUs.

01/10/2018 – 05/07/2020 Modena, Italy
FELLOW RESEARCHER UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Research fellow at HiPeRT Lab, University of Modena and Reggio Emilia, Italy

Main topics of the research are Real-Time scheduling, parallelization of codes for GPU architectures, numerical optimization algorithms, Machine Learning

04/2017 – CURRENT Santa Clara, California, United States
CONTRACTOR NVIDIA

Study of latest generation heterogeneous embedded platforms from the point of view of predictability and schedulability.

EDUCATION AND TRAINING

10/2010 – 27/02/2014 Modena, Italy
PH.D. IN "MULTISCALE MODELLING, COMPUTATIONAL SIMULATIONS AND CHARACTERIZATION IN MATERIAL AND LIFE SCIENCES" Università degli Studi di Modena e Reggio Emilia

Research topics of my PhD were mainly associated with Numerical Analysis and the parallelization of its algorithms. Main fields of application were Physics, Chemistry, Astronomy and Bioinformatics.

Address via Campi 213/b, 41125, Modena, Italy |

Field of study Mathematics , Information and Communication Technologies (ICTs) not further defined |

Thesis Methods and software for image restoration on different parallel environments

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	B2	B2	C1
FRENCH	B1	B2	B1	B1	B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

PUBLICATIONS

See attached list

You can also check Scopus and Scholar links for updated info

Links https://www.scopus.com/authid/detail.uri?authorId=55061566600 | https://scholar.google.it/citations?user=HtMg4zYAAAAJ&hl=it

PROJECTS

2016 – 2018
European Project: OPEN-NEXT (POS-FESR)

Interference analysis on low power heterogeneous embedded platforms.
Development of memory-centric scheduling algorithms for industrial applications

01/2018 – 30/06/2021
European Project: CLASS (Horizon 2020, Work Package leader)

Benchmarking of edge and cloud platforms for near-real-time big data analysis.
Scheduling analysis and development of tools for real-time monitoring on the edge.

Link https://class-project.eu/

04/2018 – 10/2021
European Project: PRYSTINE (ECSEL)

Architecture design for future implementation and integration on an autonomous vehicle.

Link https://prystine.eu/

05/2018 – CURRENT
European Project: SECREDAS (ECSEL)

Integration of cybersecurity algorithms for urban edge-fog-cloud communication.

Link https://secredas-project.eu/

01/09/2020 – CURRENT
European Project: 5GMETA (Horizon 2020, Work Package leader)

Monetization strategies for data extracted from sensorized vehicles and smart cities

Link https://5g-ppp.eu/5gmeta/

06/2023 – CURRENT
European Project: dAIEDGE

The dAIEDGE Network of Excellence (NoE) seeks to strengthen and support the development of a dynamic European cutting-edge AI ecosystem under the umbrella of the European Lighthouse for AI, and to sustain the development of advanced AI.

Link https://daiedge.eu/

MANAGEMENT AND LEADERSHIP SKILLS

Program Commitee Member

Euromicro DSD from 2018
WATERS 2019, 2020
ECRTS 2018, Artifact Evaluation
SSIV + from 2020
LOD (International Conference on Machine Learning, Optimization, and Data Science) from 2021

Scientific Journal reviewer

- Scientific Reports (Nature, Q1)
- IEEE Transactions on Industrial Informatics (Q1)
- Journal of Systems Architecture (Q1)
- The International Journal of Universal Computer Science (Q2)
- Concurrency and Computation: Practice and Experience (Wiley Q3)
- Various MDPI journals (Micromachines Q2, Sensors Q2)

Journal Editor

GUEST ASSOCIATE EDITOR in Micromachines per "MDPI".
GUEST ASSOCIATE EDITOR in Sensor Fusion and Machine Perception per "Frontiers".

Links https://www.mdpi.com/journal/micromachines/special_issues/Microprocessors | https://www.frontiersin.org/research-topics/18916/next-generation-real-time-architectures-inautonomous-robots-and-automation-systems