

Europass Curriculum Vitae



Personal information

Surname / First name

Gianluca Brilli

Nationality

Italian

Date

2022 - in corso

Role

Postdoctoral researcher

Location

University of Modena and Reggio Emilia - Physics, Informatics and Mathematics (FIM) department

Teaching

Date

2023-

Role

Teacher of the "Informatica Industriale" course, on microcontrollers (STM32) programming, FPGA-based design and parallel programming

Location

"Enzo Ferrari" engineering department

Date

2019-2022

Role

Teacher of the "Architettura dei Calcolatori" course, on RISC-V assembly programming and digital circuits

Location

"Enzo Ferrari" engineering department and Physics, Informatics and Mathematics (FIM) department

Date

2019-2022

Role

Teacher of the "High Performance Computing" course, on HLS-based design targeting FPGAs

Location

Physics, Informatics and Mathematics (FIM) department

Professional experience

Date

2017-2018

Role

University internship on Real-Time Embedded field, where I worked on the implementation and testing of Convolutional Neural Networks for object detection and classification on GPU and FPGA platforms.

Location

Physics, Informatics and Mathematics (FIM) department - HiPeRT-Lab

Date

2014-2015

Role

University internship in the field of numerical optimization and parallel computing, where I worked on the implementation of optimization methods for image reconstruction on distributed memory architectures.

location

Physics, Informatics and Mathematics (FIM) department

Date

2011-2012

Role

front-end developer for public administration websites.

Location

Progetti di Impresa srl

Date

2010

Role

Internship where I worked on implementation and testing of embedded systems for people counting.

Location

Microlog srl

Education

Date

2019 - 2022

Subject PhD in Mathematics
 Location University of Modena and Reggio Emilia
 Thesis title Memory Interference and Mitigations in Reconfigurable HeSoCs for Embedded AI
 Supervisor Prof. Marko Bertogna

Date 2016-2018
 Subject Master degree in computer engineering.
 Location University of Modena and Reggio Emilia
 Thesis title Implementation and Validation of Convolutional Neural Networks on Embedded Automotive Platforms.
 Supervisor Prof. Marko Bertogna

Date 2012-2015
 Subject Bachelor degree in computer science
 Location University of Modena and Reggio Emilia
 Thesis title Metodi del Gradiente a Memoria Limitata per l'Ottimizzazione su Architetture Parallele.
 Supervisor Prof. Luca Zanni

Date 2005-2010
 Subject Perito Capotecnico in Elettronica e Telecomunicazioni
 Location ITIS A.Volta Sassuolo

Personal skills

Mother tongue Italian

Other languages
 Self-assessment
 European level^(*)

english

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user

^(*) Common European Framework of Reference (CEF) level

Technical skills Languages: Java, C/C++, Python. Web programming: J2EE, Spring, Django, JQuery, AJAX. Parallel programming: OpenCL, CUDA. Embedded: Xilinx FPGA, Microcontrollers. Tools: Xilinx Vivado, Xilinx Vitis, ARM Keil.

Driving license B

Additional information

Publications **G. Brilli**, P. Burgio and M. Bertogna, *Convolutional Neural Networks on Embedded Automotive Platforms: A Qualitative Comparison*, 2018 International Conference on High Performance Computing & Simulation (HPCS), 2018.

G. Brilli and P. Burgio. 2019. *An open source research framework for IoT-capable smart traffic lights*. In Proceedings of the 5th EAI International Conference on Smart Objects and Technologies for Social Good (GoodTechs '19). Association for Computing Machinery, New York, NY, USA.

G. Brilli and P. Burgio. 2019. *Interference analysis of shared last-level cache on embedded GP-GPUs with multiple CUDA streams*. Workshop on Analysis Tools and Methodologies for Embedded Real-Time Systems (WATERS).

M. Verucchi, **G. Brilli**, D. Sapienza, M. Verasani, M. Arena, F. Gatti, A. Capotondi, R. Cavicchioli, M. Bertogna and M. Solieri, *A Systematic Assessment of Embedded Neural Networks for Object Detection*, 2020 25th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2020.

G. Brilli, A. Capotondi, P. Burgio and A. Marongiu, *Understanding and Mitigating Memory Interference in FPGA-based HeSoCs*, 2022 Design, Automation & Test in Europe Conference & Exhibition (DATE), 2022.

A. Bernardi, P. Burgio, **G. Brilli**, A. Capotondi and A. Marongiu, *An FPGA Overlay for Efficient Real-Time Localization in 1/10th Scale Autonomous Vehicle*, 2022 Design, Automation & Test in Europe Conference & Exhibition (DATE), 2022.

G. Brilli, Roberto Cavicchioli, Marco Solieri, Paolo Valente, Andrea Marongiu, A. Capotondi and A. Marongiu, *Evaluating Controlled Memory Request Injection for Efficient Bandwidth Utilization and Predictable Execution in Heterogeneous SoCs*, ACM Transactions on Embedded Computing Systems (TECS)

G. Brilli, G. Valente, A. Capotondi, P. Burgio, T. Di Mascio, P. Valente and A. Marongiu, *Fine-Grained QoS Control via Tightly-Coupled Bandwidth Monitoring and Regulation for FPGA-based Heterogeneous SoCs*, (will appear at the 60th Design Automation Conference - DAC)

Personal information

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