

## Form to collect the information relevant for the PhD Quality Awards

### PhD Student information

Surname	De Sio
Name	Corrado
PhD Cycle	35 Cycle
Tutor	Prof. Luca Sterpone

### Participation in Research Projects (add as many rows as necessary, 1 row per project)

Project name and short description	Competitive Selection	Project Scope	From	To	Role in project	Notes
"CARS" – C-Analyzer for Reliable Software	No	I	2020	2021	P	In collaboration with Punch Turin 10.1109/ISPDC55340.2022.00022
"Robotics Functional Safety"	No	I	2021	2022	P	In collaboration with NVIDIA  <i>"Assessing Convolutional Neural Network Reliability through statistical fault injection"</i> , DATE 23, In press.
"EuFRATE: European FPGA radiation-hardened architecture for telecommunications"	No	I	2021	2023	P	In collaboration with Argotec
"Radiation analysis of MILANI CubeSat" as part of the HERA mission	No	I	2021	2023	P	In collaboration with Tyvak 10.1109/DSN-S58398.2023.00061
HONEY: Hybrid Online tEchnology for particle therapy – PRIN 2022	Yes	N	2023	2025	P	In collaboration with Università di Torino
TERRAC: Towards Exascale Reconfigurable and Rad-hard Accelerated Computing in Space	Yes	I	2023	2024	P	In collaboration with ESA

### Teaching Activities in University Courses (add as many rows as necessary, 1 row per activity)

Name of the course where the activity has been done	Course type	Course CFUs	Academic year	Role in course	number of hours of teaching <b>done</b>	CPD evaluation (if any)	Notes
Informatica - 12BHDLZ	B	8	2019/2020	L	22.5	3.40	Prof. Gandino
Informatica - 12BHDLZ	B	8	2019/2020	L	9	3.56	Prof. Politano

Algoritmi e programmazione - 05MNONX	B		2020/2021	L	39	3.415	Prof. Benso
Specification and simulation of digital systems - 02LQDOV	M	6	2020/2021	L	39	3.4625	Prof. Camurati
Algoritmi e programmazione - 05MNONX	B	8	2021/2022	L	31.5	N.D.	Prof. Benso
GPU programming - 01URVOV	M	6	2021/2022	L+E	13.5	3.29	Prof. Montruccio
Algoritmi e programmazione - 05MNONX	B	8	2022/2023	L	38	3.28	Prof. Benso
GPU programming - 01URVOV	M	6	2022/2023	L+E	12	3.38	Prof. Sterpone

**Research Dissemination Activities** (add as many rows as necessary, 1 row per activity)

Dissemination activity name	Date	Link	Description	Notes
DAUIN PhD Poster Day 2022	8/11/2022	<a href="http://www.phd-dauin.polito.it/phddays.html">http://www.phd-dauin.polito.it/phddays.html</a>		A DEMO has been presented
DAUIN PhD Day for Companies 2021	24/11/2021	<a href="http://www.phd-dauin.polito.it/phddays.html">http://www.phd-dauin.polito.it/phddays.html</a>		
PitchD	3/11/2021	<a href="https://www.youtube.com/watch?v=3OsOsrI57u">https://www.youtube.com/watch?v=3OsOsrI57u</a>		
DAUIN Ph.D. Poster Day 2021	27/10/2021	<a href="http://www.phd-dauin.polito.it/phddayforall2020.html">http://www.phd-dauin.polito.it/phddayforall2020.html</a>		
Secretary of the IEEE Student Branch	2022	<a href="https://site.ieee.org/sb-polito/about/branch-board/">https://site.ieee.org/sb-polito/about/branch-board/</a>		

**Participation in Contracts with Industrial Companies** (add as many rows as necessary, 1 row per contract)

Contract name and short description	Company name	From	To	Role in contract	Notes
"VeriPy" – Virtual Analysis of FPGA CRAM	ESA	2019	2020	P	
"CARS" – C-Analyzer for Reliable Software	Punch Turin	2020	2021	P	
"Basic C Technology Transfer",	Punch Turin	2021	2021	P	
"Robotics Functional Safety"	NVIDIA	2021	2022	P	
"EuFRATE: European FPGA radiation-hardened architecture for telecommunications"	Argotec	2021	2023	P	

"Radiation analysis of MILANI CubeSat" as part of the HERA mission	Tyvak	2021	2023	P	
Distributed High Integrity Airborne System	Leonardo	2023	2024	P	
High Integrity Avionic Backbone	Leonardo	2023	2024	P	

**Patents** (add as many rows as necessary, 1 row per patent)

Patent title	Patent Type	Last patent status	Date	Notes
SOFTWARE FOR EXPLOITING SURVEILLANCE VIDEOS FOR REAL-TIME DETECTION OF VIOLENCE THROUGH "SIGNAL FOR HELP"	Software Registration	Filed	2023	

**Technology Transfer Activities** (add as many rows as necessary, 1 row per activity)

Technology Transfer Activity Description	From	To	Role in activity	Notes
"Basic C Technology Transfer",	2021	2021	P	Main Teacher

**Awards** (add as many rows as necessary, 1 row per award)

Award Description	Date	Type	Notes
DAUIN PhD Quality Award – 2 <sup>nd</sup> Year	2023	PhD Quality Award	
Best of SELSE 2023 award	2023	Best Paper Award	Paper: Programmable SEL Test Monitoring System for Radiation Hardness Assurance
DATE 23 - Best Paper Candidate	2023	Best Paper Award Candidate	Paper: Assessing Convolutional Neural Networks Reliability through Statistical Fault Injections
DFT 22 - Best Student Paper Award	2022	Best Student Paper Award	Paper: Analysis of Proton-induced Single Event Effect in the On-Chip Memory of Embedded Processors
SMACD 22 - WICAS Best Paper Award Candidate	2022	WICAS Best Paper Award Candidate	Paper: A Placement-Oriented Mitigation Technique for Single Event Effect in Monolithic 3D IC.
Seressa 2022 - Best Poster Runner Up	2022	Best Poster Runner Up	Poster: SEU Evaluation of Hardened-by-Replication Software in RISCv Soft Processors