DEVIGILI MARIANO, PH.D.

FELLOW RESEARCHER & ENGINEER | OPTICAL COMMUNICATIONS AND SENSING | MACHINE LEARNING

I am a passionate engineer and researcher in the field of optical communications. Currently I am based in Dublin, Ireland working as Engineer at LightSensAI Limited and as Research Fellow within CONNECT / School of Engineering at the Trinity College Dublin.

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EXPERIENCES

Timing	Role	Institution		Main Activities	Location
Now Jul 2025	Engineer Research Fellow	LightSensAI Limited Trinity College Dublin	LightSensAI Trinity College Dublin	- Research and Development on Integrated optical sensing and communications. Developing novel hardware and software solutions. **ICON EU-Funded Project** - Leading Research Activities Student Supervision, Funding Proposals. - Testing Components, Maintenance of a Long-Haul Optical System.	Dublin, Ireland
Jun 2025 Dec 2024	Research Fellow	University of Trento	UNIVERSITY OF TRENTO	- Deployment ML-driven EDFA models for OSNR estimation. - Implementation of a LoraWAN Smart Farming System. **MUR PNRR IF SOW Project**	Trento, Italy
Sep 2024 Dec 2023	Research Engineer Intern	FiberCop S.p.A. TIM S.p.A.	TIM	- Control of Pluggable Devices (EDFAs, ZR/ZR+ transceivers) - Experimental characterization of EDFA pluggable modules. - Modelling EDFA based on deep and ensemble learning. **MENTOR MSCA EID EU-Funded Project**	Turin, Italy
Dec 2023 Jan 2023	Research Engineer Intern	Coriant R&D GmbH (now part of Nokia group)	coriant	- Experimental characterization of filtering penalties in digital subcarrier multiplexed (DSCM) signals. - Modeling filtering penalties in DSCM signals through simulations, deep learning and analytical models. **MENTOR MSCA EID EU-Funded Project**	Munich, Germany
Oct 2024 Nov 2021	Early-Stage Researcher	Universitat Politecnica de Catalunya	UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH	- Research on the applications of optical layer digital twins: from failure management to QoT estimation for lightpath provisioning and Optical Amplifier Control. **MENTOR MSCA EID EU-Funded Project**	Barcelona, Spain
May 2018 Feb 2018	Student Intern	Teleco SL	Teleco	- Field experience (e.g., fiber splicing, failures localization) - Design of a FTTH/GPON access network (~560 IU). **Erasmus + EU-Funded Project**	Valencia, Spain

EDUCATION

Timing	Degree	University		Thesis	Location
Nov 2024 Nov 2021	Doctor of Philosophy (PhD)	Universitat Politecnica de Catalunya	UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH	"Applications of the OCATA Optical Layer Digital Twin" (Prof. L. Velasco, Dr. A. Napoli) LINK **MENTOR MSCA EU Funded Project**	Barcelona, Spain
Sep 2021	Master in Photonic Integrated Circuits Sensors and Networks	Scuola Superiore Sant'Anna	Sant'Anna School of Advanced Studies – Pisa	"An experimental study on the multiband optical networks assisted by GNPy" (Prof. N. Sambo) Related publication LINK	Pisa, Italy
	Master of Engineering	The University of Osaka			Osaka, Japan
Sep 2019	MSc in Photonic Integrated Circuits Sensors and Networks	Aston University	Aston University	**PIXNET EMJMD EU Funded Project**	Birmingham, UK
Jul 2019 Sep 2015	BSc in Information and Communications Engineering (w/ 10 months Erasmus + exchange)	University of Trento	UNIVERSITY OF TRENTO	"Design rete ottica passiva nella Comunidad Valenciana" (Prof. F. Granelli)	Trento, Italy

SELECTED LIST OF PUBLICATIONS

M. Devigili, S. T. Ahmad, T. Xie, A. Kaszubowska-Anandarajah, D. Kilper, "Non-Disruptive Lightpath Passband Characterization Using Optical Frequency Combs", ONDM 2026.

M. Devigili, E. Riccardi, A. Nespola, R. Morro, S. Straullu, R. D'Ingillo, V. Curri, L. Velasco, F. Granelli, "ML-Based Modeling of EDFA Pluggable Modules for OSNR stimation," ONDM, 2025. LINK

M. Devigili D. Sequeira, P. Torres-Ferrera, S. Srivallapanondh, M. Ruiz, N. Costa, C. Castro, A. Napoli, J. Pedro, and L. Velasco, "Twining Digital Subcarrier Multiplexed Optical Signals with OCATA for Lightpath Provisioning," JLT, pp. 1–10, 2024. LINK

M. Devigili, M. Ruiz, N. Costa, C. Castro, A. Napoli, J. Pedro, and L. Velasco, "Extending the OCATA Digital Twin for Optical Connections based on Digital Subcarrier Multiplexing", OFC 2024. LINK

M. Devigili, M. Ruiz, N. Costa, A. Napoli, C. Castro, J. Pedro, L. Velasco, "Applications of the OCATA time domain digital twin: from QoT estimation to failure management," JOCN, vol. 16, no. 2, pp. 221-232, 2024. LINK

M. Devigili, M. Ruiz, S. Barzegar, N. Costa, A. Napoli, J. Pedro, and L. Velasco, "Degradation Detection and Severity Estimation by Exploiting an Optical Time and Frequency Digital Twin", OFC 2023. LINK

M. Devigili, M. Ruiz, N. Costa, A. Napoli, J. Pedro, and L. Velasco, "Dual Time and Frequency Domain Optical Layer Digital Twin" in Proc. IEEE/OPTICA ECOC, 2022. LINK

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