DANILO ZIA

Master's Degree in Physichs

Sapienza - University of Rome [2018 – 2020]

Address: Piazzale Aldo Moro 5, 00185 Roma (Italy)

Thesis: Machine learning classification of vector vortex beams

Supervisor: Prof. Fabio Sciarrino

Description: The thesis focused on the the engineering and detection of quantum and classical states using a photonic platform. In particular, an accurate model for the photon propagation inside an experimental setup was developed. The use of this model enhanced the performances in the measurement of the orbital angular momentum of photons through the holographic technique, and in the recognition of vector vortex beams with a machine learning-based approach.

Bachelor's Degree in Physics

Sapienza - University of Rome [2015 – 2018]

Address: Piazzale Aldo Moro 5, 00185 Roma (Italy)

Thesis: Direct dark matter detection with noble liquid detectors

Supervisor: Prof. Stefano Giagu

High School Diploma

Liceo Scientifico G. Piazzi [2010 – 2015]

Address: Via Campagnanese 3, 00067 Morlupo (Italy)

PHD COURSES AND SCHOOLS

Advanced Quantum Information

[03/2021 – 07/2021]

Held by Prof. Fabio Sciarrino

Deep Learning Methods in Physics

[04/2021 – 06/2021]

Held by Prof. Stefano Giagu

Summer School Neuromorphic photonics (NMP2021)

[20/06/2021 – 26/06/2021]

CERTIFICATES

Machine Learning

[20/07/2020]

Issued by Coursera - Stanford University https://www.coursera.org/account/accomplishments/certificate/KAUR4U4K83RU

Cambridge ESOL Certificate
[12/07/2013] Level
B1

AWARDS

Borsa di collaborazione [
02/2019 – 12/2019]
Laboratory assistant for the course "Laboratorio si Sistemi e Segnali" at Sapienza - University of Rome.

Bando giovani ricercatori Sapienza
[01/06/2022 – 01/10/2022]
Funds issued by Sapienza to spend a research period at a foreign institution.

LANGUAGE SKILLS

Mother tongue(s): **Italian**

Other language(s): **English**

DIGITAL SKILLS My Digital Skills

Microsoft Office / Wolfram programming language / Python programming language / C programming language / LaTeX / Operating Systems (Windows, Linux)

PUBLICATIONS

A. Suprano, D. Zia, E. Polino, T. Giordani, L. Innocenti, M. Paternostro, A. Ferraro, N. Spagnolo and F. Sciarrino, "Enhanced detection techniques of Orbital Angular Momentum states in the classical and quantum regimes", New J. Phys. 23 073014 (2021)

A. Suprano, D. Zia, E. Polino, T. Giordani, L. Innocenti, M. Paternostro, A. Ferraro, N. Spagnolo and F. Sciarrino, "Dynamical learning of a photonics quantum state-engineering process", Adv. Photon. 3(6) 066002 (2021)
D. Zia, R. Checchinato, A. Suprano, T. Giordani, E. Polino, L. Innocenti, A. Ferraro, M. Paternostro, N. Spagnolo and F. Sciarrino, "Regression of high dimensional angular momentum states of light", Arxiv preprint (2022)

CONFERENCES AND SEMINARS

European Quantum Technologies Conference (EQTC)

[Virtual Conference, Dublin, Ireland, 28/11/2021 – 01/12/2021] Poster Session

Photonic Quantum Technologies – A Revolution in Communication, Sensing, and Metrology (764. WE-Heraeus-Seminar)

[Physikzentrum Bad Honnef, 17/03/2022 – 19/03/2022] Poster session

OUTREACH ACTIVITIES

Member of the Rome Association of Young Scientist (RAYS)

[2021 – Current]

Our master and PhD student group is financially supported by the Optical Society of America (OSA, https:// www.osa.org/enus/home/) and by the Society of Photo-Optical Instrumentation Engineers (SPIE, httpp:// spie.org/?SSO=1) and its aim is to promote the study of physics, and specifically optics, among high-school and bachelor degree students.