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| **EDUCATION \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | |
| **NEW YORK UNIVERSITY ABU DHABI** | *UAE | 2018 – 2022* | |
| Bachelor of Science in Physics and Math (Double Major), Engineering (Minor), Full Ride | |
| **NATIONAL TECHNICAL UNIVERSITY OF ATHENS** | *Greece | 2017* | |
| Accelerated program for Advanced Programming Methodologies, for preparation for the IOI. | |

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| **EXPERIENCE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | |
| **Research Assistant Astroparticle Physics Laboratory | NYUAD** | *UAE | 2018 – now* | |
| Full time research assistant on theoretical and Experimental physics projects  Theoretical Physics and Practical Design: Haloscope Dark Matter Detector (Axions, Dark Photons)   * Optics Analysis for Detector design and Simulation with SolidWorks/COMSOL * Dark photon – photon scattering simulations with Geant4.   Theoretical physics: Acoustic signal of Minimum Ionizing Particles in Noble liquids   * Development of Effective Quantum Field Theory for acoustic signals in strongly damped environments. * Classical study of strong damping including local Lagrangian symmetries, far field approximation of solutions, and FEM methods for short argument estimation of solutions.   Engineering Design: Compact x-ray Fluorometer (XRF) for ancient artefact elemental analysis   * Analog Adjustable PID for Detector Noise Reduction with Liquid Helium | Circuit/PCB Design, Simulation, Manufacturing, Implementation. CAD/CAM Head Sensor Assembly | |
| **Research Assistant Center for Quantum and Topological Systems | NYUAD** | *UAE | 2022 - now* | |
| Theoretical Physics research on Dissipative Quantum Systems   * Using topological descriptions of vector fields, attempted quantization of dissipative systems under the supervision of Professor Hisham Sati | |
| **Research Assistant Light-1 CubeSat Mission | GSSI & NYUAD** | *Italy | 2022* | |
| Designed the data reconstruction and analysis pipeline for the data collected in the Light-1 space satellite that orbits the earth to categorize terrestrial gamma ray flashes. | | |
| **Research Assistant Applied Multimedia Laboratory | NYUAD** | *UAE | 2018 – 2020* | |
| Applied Thermoelectric Control Optimization research using TEC. Development of optimum digital feedback control for Peltier Cells applied for Thermovibrotactile Funneling Systems  Development of vibrotactile actuation, with independent control of frequency and amplitude. Spice Resonance Simulations, Circuit Design and Development  Awarded 1st place in regional robotics competition for social good in the Arab World. | |
| **Multivariable Calculus Teaching Assistant | NYUAD Mathematics** | *UAE | 2022 – now* | |
| Teaching assistant for Multivariable Calculus with applications to economics. Duties include Recitation instruction, Curriculum development, Grading. |  | |
| **Engineering Teaching Assistant | NYUAD ECE** | *UAE | 2019 – 2020* | |
| Teaching Assistant for Programming for Engineers Course in NYUAD. Topics include C++, MATLAB, Searching, Sorting Algorithms, Data Structures, Dynamic Memory, OOP, Unity. Duties include Lab instruction, Recitations, Grading. | |
| **Student Council Head of Central & Eastern Europe | Microsoft** | *EU | 2016 – 2017* | |
| * Part of globally selected 12-member board for Microsoft’s Education Activities coordination. * Organized Outreach events and Competitions in Russia, Greece, Lithuania. Head Organizer of International STEM outreach conference. Coordinator of Global Student Ambassador Program. | |

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| **RESEARCH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  *(A list of publications can be found here:* [*https://orcid.org/0000-0003-2296-6415*](https://orcid.org/0000-0003-2296-6415)*)* | | |
| **Quantum treatment of viscous acoustics** | *UAE | 2021 - now* | |
| (Project in Progress) **(First Author Publication)** Rigorous treatment of quantization of sound in a dissipative medium such as viscous liquids. | |
| **The Scientific Payload of LIGHT-1: A 3U CubeSat Mission for the detection of Terrestrial Gamma-Ray Flashes** | *UAE | 2021 - 2022* | |
| (Manuscript in Preparation for Nuclear Instruments and Methods) Reconstruction and analysis of data from the Light-1 Satellite Mission on terrestrial gamma-ray flashes. |  | |
| **Acoustic detection potential of single minimum ionizing particles in viscous liquids** | *UAE | 2019 - 2022* | |
| (With Referees of Physical Review Research) **(First Author Publication)** Classical treatment of viscous acoustics sourced by particles passing through large volumes of noble liquids. Applications described in increasing the resolution of Direct Dark Matter experiments. | |
| **Multilayer Dielectric Haloscope for Dark Photon Research** | *UAE | 2019 - 2021* | |
| Design and deployment results of a multilayer Haloscope to search for dark photons in the 1.5 eV range. We present the design, theoretical models, and results. No significant excess was observed. | |
| **Mathematical Gauge Theory and Applications to Particle Physics** | *UAE | 2021* | |
| Directed Study on Gauge Theory with applications to particle physics under the guidance of Professor Hisham SATI (NYUAD). Books: Loring Tu 'Introduction to manifolds' and Mark Hamilton 'Mathematical Gauge Theory'. | |
| **Numerical Simulation of Stern Gerlach Experiment** | *UAE | 2020* | |
| Computational Physics simulation of magnetic fields of arbitrarily shaped conductors given magnetization, and a 2nd order accurate methodology for solving the time dependent Schrödinger equation. | |
| **Soft Haptics Physics Literature** | *UAE | 2020* | |
| Theoretical physics analysis of multiple techniques used in the field of soft haptics. The report includes Magneto and Electrostriction, Smart Polymers, Microfluidics, Shape Memory alloys and more. | |
| **Decentralized Bioinspired Non-Discrete Model for Autonomous Swarm Aggregation Dynamics** | *UAE | 2018 – 2019* | |
| (Published in Applied Science) **(First Author Publication)** Algorithmic model developed based on ant movement and aggregation for applications in non-programmable swarm robotic systems. Publication to Applied Sciences. | |
| **TEC Control System Development for Thermovibrotactile Funneling Applications** | *UAE | 2018* | |
| Research in the psychophysical Thermovibrotactile funneling illusion. Design, Simulation, Implementation of digital active feedback control system. | |
| **Non-Contact Roughness Detection Methodology based on HCSR04 Ultrasonic Artefacts** | *UAE |2018* | |
| Implementation of Artificial Neural Networks learning to analyze artefacts of ultrasonic sensors and determine the roughness (proportional to ultrasonic scattering) of different materials | |
| **Design, Simulation & Development of Assistive Technology for Visually Impaired People, based on Echolocation.** | *Greece | 2015 – 2016* | |
| Design of echolocation emulating vibrotactile vest for visually impaired people. Algorithm for real-time ultrasonic environment mapping was developed and applied to development of low-cost assistive device | |

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| **Volunteering & Extracurricular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | | |
| **Volunteer Climbing Instructor NYUAD Athletics** | | *UAE | 2022-now* | |
| Volunteered as a climbing instructor at NYUAD Athletics. Teaching beginner and advanced climbing techniques, managing and maintaining the wall. | | |
| **Women in STEM (WeSTEM) student organization** | | *UAE | 2019-2021* | |
| Facilitated workshops, meetings, and information sessions directed at encouraging the participation of women in STEM, and in particular Physics and Mathematics. | | | |
| **Workshop Facilitator at Women in STEM (WeSTEM) Conference** | | *UAE | 2019* | |
| Designed the curriculum and conducted a workshop for high school students on the physics and engineering of sound waves through an interactive experiment. More information can be found in the workshop handout. | | |
| **Volunteer University Physics and Math Tutor** | | *UAE | 2019-2020* | |
| Volunteered in tutoring university students 4-5 hours per week on the following subjects: Quantum Mechanics, Mechanics, Foundations of Science, Multivariable Calculus, Linear Algebra, Electromagnetism and Special Relativity. | | |
| **Electrical Engineering Workshop Facilitator for UAE high school students** | *UAE | 2018-2019* | |
| Developed the curriculum and helped conduct a weekly, semester-long series of workshops designed to introduce electrical engineering to students from across the United Arab Emirates. | | |
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| **SKILLS & COURSEWORK \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | |
| ***Theoretical Physics & Math – Coursework.*** Quantum Field Theory (Graduate Course), Differential Geometry, General Relativity, Real Analysis, Complex Analysis, Partial Differnetial Equations, Quantum Mechanics II, Honors Abstract Algebra, Numerical Analysis, Computational Physics *|*  ***Physics & Engineering – Coursework.*** Mechanics, Statistical Mechanics, Quantum Mechanics, Electricity and Magnetism, Special Relativity, Advanced Physics Laboratory, Computational Physics, Advanced Circuits, Digital Logic, Programming (C++), Applied Machine Learning |  ***Programming.***  C++, C, Python, Geant4, Java, MATLAB, JavaScript, Qiskit. |  ***Formatting.***  HTML, CSS, PHP, LaTeX |  ***Software.*** Mathematica, SolidWorks, Fusion 360, OnShape, COMSOL, Overleaf, Adobe CC, Eagle, Upverter, Unity, Blender, Conda, Qt, Processing, Davinci Resolve, Cadence, QUCS, LTspice. |  ***Hardware.*** Arduino, Raspberry Pi, Circuit Prototyping, 3D Printing, Laser Cutting, CNC, Machining, Electronics |

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| **Research Assistant Center for Cosmology and Particle Physics (CCPP) | NYU** | *TIME* | |
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