

Narek Stepanyan

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Spanish Citizenship

Driving Licence

in [Linkedin Profile](#)

Education

MSc. in Electronic Engineering

University of Alcalá. [Transcript](#)

Madrid, Spain
Sept. 2019 to Sept. 2022

BSc. in Mechanical Engineering

University of León. [Transcript](#)

Leon, Spain
Sept. 2012 to Dec. 2018

Professional Experience

INDRA. Defence and Space Department, Antenna and RF Engineer

Madrid, Spain
June 2024 to Currently

- Antenna (e.g., horn, spiral, MPAs, and biconical) design, analysis, and optimization using Computational Electromagnetics (CEM) software such as CST Studio Suite and HFSS.
- Assessment, through CEM simulations and analytical models, of the impact of surrounding elements (e.g., radomes and housing) on antenna performance.

INTA (Spanish Aerospace National Technological Institute)

Space Optics Department, Fellowship

Madrid, Spain
May 2021 to Oct. 2022

- Completed MSc [thesis](#) on the effects on polarization due to the use of stabilizing or beam-steering mirrors.
- Modelling the polarization variation, using MATLAB, in the Polarimetric and Helioseismic Imager of the Solar Orbiter Mission (SO/PHI) and in Quantum Key Distribution (QKD) systems.
- Measurement of the coating properties of the fast steering mirror (FSM) used in SOPHI using spectroscopic ellipsometry.

INTA (Spanish Aerospace National Technological Institute)

Electromagnetic Compatibility Area, Fellowship

Madrid, Spain
Oct. 2019 to May 2021

- Software development and migration from VB6 to the .NET framework for controlling EMC-testing instrumentation through the GPIB and Ethernet protocols.
- EMC testing in reverberation and anechoic chambers in compliance with standards (e.g., MIL-STD-461 and ECSS-E-ST-20), using equipment such as signal generators and fiber-optic E-field probes.
- Implementation of techniques (e.g., spread spectrum, shielding, and decoupling) to meet EMC standards.

ESA-EAC (European Space Agency's Astronaut Center)

Spaceship EAC Team, Intern

Cologne, Germany
Oct. 2020 to March 2021

- Design and development of hardware (e.g., solid-state amplifiers, antennas, and loaded waveguides) for ISRU (in-situ resource utilization) activities on the Moon.
- Measurement of the grain size of lunar regolith simulants using a confocal microscope.
- Proposed and initiated the collaboration between INTA's RF Section and ESA-EAC to perform complex permittivity and permeability measurements of lunar regolith simulants.

Publications

[Electromagnetic Characterization of Lunar Regolith Simulants](#)

April 2022

Software and Programming Skills

Software: CST Studio Suite, Matlab, Visual Studio, SolidWorks, Altium, Autodesk Inventor.

Programming Languages: C, Python, Matlab, C#, Visual Basic, Visual Basic .NET.

Extracurricular Activities During The Bachelor's Degree

University of Leon Formula Student Team, Team member

- Car's chassis and body design using CAD, CAE and CFD software.
- Composite manufacturing by means of vacuum impregnation process.

Leon, Spain
Aug. 2018 to Sept. 2019

Mechanical Car Workshop, Apprentice

- Hands-on experience using a wide variety of tools.
- Detection, repair, and replacement of damaged components and mechanisms in cars.

Leon, Spain
Sept. 2018 to Sept. 2019

Non-Engineering works, Waiter and Lifeguard

- Although these are non-STEM related work experiences, they helped me to improve my inter-personal and intra-personal intelligence, as well as communication skills.

León, Spain
Agu. 2017 to Sept. 2018

Projects By Personal Initiative

Python Programming

- Developing an [application](#) that studies the benefits of the electrical power factor improvement.
- Learning Python, Object Oriented Programming (OOP) and Aspect Oriented Programming (AOP).

Aug. 2018

Electromagnetic accelerator prototype as CERN internship applicant

- Designing, developing, testing and manufacturing the prototype, [video](#).
- Used components and instruments e.g., PCBs, transistors, photoelectric sensors, Oscilloscope.

May 2018

Student Exchanges

Erasmus+ Exchange

Training course for youth entrepreneurship and career development.

Split, Croatia
Aug. 2018

University of La Laguna

Mechanical modelling of structural elements. Programming a simple [FEM application](#).

The Canary Islands, Spain
Feb. 2017 to Sept. 2017

Volunteering

Teaching at Spanish Red Cross

Academic teaching and support to children. Rivers clean-up.

Leon, Spain
Sept. 2018 to June 2019

European Students' Forum AEGEE

Board member as Erasmus + responsible in AEGEE-Leon.

Leon/Brussels, Spain/Belgium
Sept. 2018 to June 2019

Organic farm

Design and construction using several materials and tools.

The Canary Islands, Spain
Summer 2017

Languages

Spanish: Native.
Armenian: Native.
English: B2 (Cambridge First Certificate).

Courses and Certificates

CMAS 2 star diver: 18 Dives, including one night dive.
Lifeguard certificate: 120 Hours.
Flight simulators: 150 Hours.

References and certificates available upon Request.