



Sergio Giménez Antón

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Address: Barcelona, Spain (Home)

WORK EXPERIENCE

15/09/2020 – CURRENT Barcelona, Spain

R&D NETWORK ENGINEER I2CAT FOUNDATION

- Designing and implementing recursive network paradigms for different fields: Quantum networks, 5G/6G networks and virtualised networks (container and virtual network functions).
- Working within the automation of the european GÉANT network.
- Working with and extending virtualization technologies such as QEMU/KVM, Docker and Kubernetes.
- Working with implementation of APIs to implement "Network as a Service" paradigm in telco-like networks.

15/09/2020 – CURRENT Gandiol, Senegal

COMMUNITY NETWORK VOLUNTEER HAHATAY

Since 2019, I have been involved with international cooperation projects. From 2021, we started the project "Hahatay Network" (<https://hahatay.network>), a collaborative initiative between the Polytechnic University of Catalonia (UPC) and the Senegalese association Hahatay. This technical-social project consists of the design and implementation of a community network that currently provides internet connectivity to approximately 50 users per day, covering a significant area of the rural region of Gandiol, near the city of Saint-Louis.

My role as coordinator involves technical management of the project, supervision of UPC students and conducting and organizing annual visits to Senegal of approximately one month duration for maintenance and expansion of the network.

14/02/2020 – 29/07/2020 Thessaloniki, Greece

RESEARCH ENGINEER ARISTOTLE UNIVERSITY

Working within the Wireless Communications Systems Group developing the diploma thesis: Development of a low-cost prototype to evaluate the performance of Transdermal Optical Links

08/2013 – 01/2020 Barcelona, Spain

HEAD BASKETBALL COACH UE CLARET

Basketball coach of different teams, gender and ages

08/2019 – 13/01/2020 Barcelona, Spain

RESEARCH ENGINEER INTERN I2CAT FOUNDATION

Working within the RINA architecture background developing a P4 implementation of the RINA data transfer and data transfer control elements.

Website i2cat.net

RESEARCH ENGINEER

● EDUCATION AND TRAINING

14/09/2020 – 19/06/2022 Barcelona, Spain

MASTER'S DEGREE IN ADVANCED TELECOMMUNICATION TECHNOLOGIES UPC - ETSETB

Address Campus Nord UPC 1-3, 08034, Barcelona, Spain | **Website** <https://matt.masters.upc.edu/>

Link <https://upcommons.upc.edu/handle/2117/365664>

14/02/2020 – 29/07/2020 Thessaloniki, Greece

DIPLOMA THESIS Aristotle University of Thessaloniki (AUTH)

Design, setup and implementation of a low-cost prototype system to evaluate the performance of a transcutaneous optical link

Level in EQF EQF level 6

Link <https://upcommons.upc.edu/handle/2117/329137>

08/2015 – 07/2020 Barcelona, Spain

BACHELOR DEGREE, COMPUTER SYSTEMS NETWORKING AND TELECOMMUNICATIONS UPC - ETSETB

Level in EQF EQF level 6

● LANGUAGE SKILLS

Mother tongue(s): **SPANISH** | **CATALAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
FRENCH	A2	A2	A2	A2	A2
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● DIGITAL SKILLS

Python | C | Linux | RINA | netmap | P4 | SDN | Docker | QEMU/KVM

● PUBLICATIONS

2020

[**A P4-Enabled RINA Interior Router for Software-Defined Data Centers**](#)

C Fernández, S Giménez, E Grasa, S Bunch 2020 - MDPI; Computers 9 (3), 70

2022

[**RINA-based virtual networking solution for distributed VNFs: Prototype and Benchmarking**](#)

2022 Joint European Conference on Networks and Communications & 6G Summit (EuCNC/6G Summit)

2020

[**A Proof of Concept implementation of a RINA interior router using P4-enabled software targets**](#)

S Gimenez, E Grasa, S Bunch.

2020 - IEEE; 2020 23rd Conference on Innovation in Clouds, Internet and Networks and Workshops

[**Application of Multi-Pronged Monitoring and Intent-Based Networking to Verticals in Self-Organising Networks**](#)

Carolina Fernández, et.al. 2022 5th CommNet.

2022
Solutions for Traffic Isolation in 5G Infrastructures Using Network Slicing Techniques

2022 32nd International Telecommunication Networks and Applications Conference (ITNAC)

Zalao Fernández, Alvaro Gabilondo, Álvaro Vázquez-Rodríguez, Carlos Giraldo-Rodríguez, J Joaquín Escudero-Garzás, Sergio Giménez, Andrés Cárdenas, Carlos Herranz

2020
Development of a low-cost prototype to evaluate the performance of Transdermal Optical Links

S Giménez

2020 - AUTH & UPC

2024
Progressive Adoption of RINA in IoT Networks: Enhancing Scalability and Network Management via SDN Integration

Sarabia-Jácome D, et.al. Applied Sciences. 2024; 14(6):2300.

2020
Development of a Low-cost Prototype to Evaluate the Performance of Transdermal Optical Links

Giménez Antón S, 2020.

2024
6G-RUPA: A Flexible, Scalable, and Energy-Efficient User Plane Architecture for Next-Generation Mobile Networks

ménez-Antón, S.; Grasa, E.; Perelló, J.; Cárdenas, 2024, Computers 2024, 13, 186.

2024
Position Paper: On the Application of Recursive Inter-Network Architecture to the Future Quantum-Enabled Internet

J. Jordán-Parra, et.al. ICC 2024 - IEEE ICC, Denver, CO, USA, 2024, pp. 3628-3633

● **PROJECTS**

01/2022 – 12/2024
GÉANT 5-1

- Contributed in automating the deployment of the GÉANT Automation Platform
- Contributed developing a PoC inside WP7 for triggering Ansible playbooks for automated reconfiguration when an alert is fired.
- Currently developing a web application to allow users to deploy virtual topologies easily through a GUI using Containerlab under the hood (Containerlab as a service).

Link <https://docs.gap.geant.org/>

01/03/2023 – 01/06/2024
Smart5Grid

- Implemented a Python-based backend component for automated deployment of Kubernetes-based apps.

Link <https://smart5grid.eu/>

09/2023 – 12/2024
6G-ENABLERS-DLT

- Implemented a Python-based intent engine backed with large language models that is able to translate high-level intents into low-level instructions.

Link <https://i2cat.net/unico/6genablers/>

01/2023 – 12/2024

6G-Open-VERSO-NET

- Implementing dynamic monitoring and alerting framework based on prometheus and thanos.
- Implementing API gateways able to interact with mobile operator infrastructure.

09/2020 – 09/2023

Open-VERSO

- Participated in the design of the interconnectivity for the federated testbeds.
- Implemented a RINA (Recursive InterNetwork Architecture) stack in C, based on a high performance packet processing framework (netmap).

Link <https://www.openverso.org/en/>

09/2019 – 01/2020

SDN in private partnerships

Implemented a hardware data plane for a RINA router using P4 language