



Nima Chaharbaghi

Date of birth: 18/08/2001 | Nationality: Iranian | Email address: nima.chaharbaghi@studio.unibo.it | Website: <https://nimachaharbaghi.github.io/> | Address: Paris, France (Home)

Education & Training

Master's degree, IEMDP Wireless telecommunication and IOT systems | École d'ingénieurs du numérique (ISEP) | 01/09/2025 - Current | PARIS, France

double degree student

Master of Science in Telecommunications Engineering | UNIVERSITY OF BOLOGNA (UNIBO) | 01/09/2024 - Current | BOLOGNA, Italy
CGPA:28.6/30

Bachelor of Science in Electrical Engineering | ISFAHAN UNIVERSITY OF TECHNOLOGY (IUT) | 01/09/2019 - 01/12/2023 | ISFAHAN, Iran

Work experience

Educational researcher | EURECOM | 01/11/2025 - Current | SOPHIA ANTIPOLIS, France

Under the supervision of Professor Florian Kaltenberger, I started my Master's thesis on the design and implementation of a digital twin infrastructure for the EURECOM GEO-5G testbed.

- Performing GPU-accelerated ray-tracing simulations with NVIDIA Sionna RT to generate realistic channel impulse responses.
- Integrating ray-traced channels into the OpenAirInterface (OAI) stack via the OAI Ray-Tracing Channel Emulator and rfsimulator.
- Conducting uplink TDoA-based UE localization experiments using the OAI LMF module and evaluating localization accuracy.

Educational researcher | WiLab | 11/01/2025 - 01/09/2025 | BOLOGNA, Italy

Under the supervision of Professor Roberto Verdone and Professor Gianni Pasolini and in collaboration with Northeastern University, I contributed to the deployment and testing of a 5G system. Key accomplishments include:

- Configured and tested the Radio Access Network (RAN) using the OpenAirInterface framework.
- Worked within an OpenShift-based environment to manage system components and ensure stable operations.
- Operated various USRPs (X410, B210) using the UHD library for hardware configuration, signal transmission, and device management.
- Supported integration and troubleshooting efforts to improve network reliability and performance.

ICT trainer | Isfahan University of Technology IT Center | 01/07/2022 - 01/09/2022 | ISFAHAN, Iran

Internship Experience: Network Manager

- Developed proficiency in Linux administration at the LPIC-1 level.
- Strengthened networking and troubleshooting abilities at the CCNA level.
- Worked with OpenStack in cloud and virtualization projects, leading to better system performance and resource use.

Hobbies and Interests

ML for Wireless Communication

MIMO

Signal Processing

Localization

Integrated Sensing and Communications

Non Terrestrial Networks

5G Prototyping

5G Core Network

O-RAN

AI-Based Resource Prediction for 5G Core Networks (Open5GS + Kubernetes) | 30/11/2024

- Deployed a full 5G Core network using Open5GS and UERANSIM on Kubernetes.
- Collected AMF CPU and memory metrics using Prometheus.
- Applied Chronos-T5 (Tiny) for time-series forecasting and compared results with TimeGPT.

<https://github.com/nimachaharbaghi/kindopen5gs/tree/main>

Secure Video Transmission System Using H.264 and AES Encryption | 2024

- Designed a system to receive and decode transport stream data transmitted in H.264 format.
- Applied Advanced Encryption Standard (AES) to secure video streams, preventing unauthorized access.
- Implemented decryption for both AES and H.264 encoded data to ensure smooth video playback.
- Analyzed data flow, encryption, and decryption processes to optimize security and performance.

Real-Time Hand Gesture Recognition Using mmWave Radar (Bachelor's Final Year Project) | 2023

- Designed and implemented signal processing algorithms to extract gesture features.
- Utilized machine learning techniques to classify and interpret hand gestures accurately.
- Integrated the system with user interfaces for practical applications.

Implementing Effects of AWGN on Constellation, Constant Complex Channel Gain, and Multipath Channel using MATLAB | 2023

- Utilizing Gray code for constellation point mapping to enhance error resilience.
- Generating random binary sequences and mapping them to complex constellations.
- Evaluating signal power and noise power for different Signal-to-Noise Ratios (SNR).
- Applying complex Gaussian noise to simulate real-world channel conditions.
- Investigating the impact of constant complex channel gain on signal constellations.

Mother tongue(s): Persian

	Understanding		Speaking		Writing
	Listening	Reading	Spoken production	Spoken interaction	
English	C1	B2	B2	B2	B2
French	A1	A1	A1	A1	A1

MATLAB | C++ | Xilinx Vivado | Open Air Interface | SRSran | Python (computer programming) | LaTeX / Microsoft Office | OpenCV | Networking Concepts (CCNA) | Linux LPIC

Full Professor | Davide Dardari | davide.dardari@unibo.it

Coordinator of PhD Programme in Electronics, Telecommunications and Information Technologies Engineering

Full Professor | Roberto Verdone | roberto.verdone@unibo.it

Department of Electrical, Electronic, and Information Engineering "Guglielmo Marconi"

Associate Professor | Gianni Pasolini | gianni.pasolini@unibo.it

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