Dr. Sergio Barrachina-Muñoz

Telco PhD | AI/ML | 5G/6G | Wi-Fi | Teacher

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SHORT BIO

Leveraging my background as a Telco/AI PhD and Research Scientist, I specialize in the convergence of 5G/6G, Wi-Fi, and AI/ML. As head of a research lab and datacenter with a team of 5+, I also lead the MLOps infrastructure that supports our work. My contributions include publishing over 50 papers and leading lab efforts in 10+ EU/Spanish research projects. Additionally, I bring over a decade of experience teaching undergraduate engineering students.

Professional EXPERIENCE

Senior Researcher in Services as NetworkS (SaS) at CTTC

Mar 2021 - currently

- Head sysadmin and MLOps with a cloud-native focus. Leading a team of 6 people.
- Design, develop, and manage 5G/6G proofs-of-concept (including O-RAN, satellite, AI/LLMbased frameworks, core, verticals, edge/cloud, etc.).
- Coordinate research projects, securing funding and delivering technical reports.

Course Instructor at UOC

Feb 2021 - currently

• Teach networking courses, mentoring 150+ students annually in telecom concepts.

Lead QA engineer, Wi-Fi expert at Centum Solutions

Jan 2021 - Mar 2021

- Define standards and procedures for (automated) testing.
- Communicate with stakeholders to understand and clarify performance requirements.

Software developer engineer intern at Ricoh Spain

Feb 2015 - Oct 2015

• Java ME development and service/project support.

QA intern at Vendo Services

Jun 2014 - Oct 2014

• Write and execute test scripts and plans in development, staging, and production.

EDUCATION

PhD in the Wireless Networking research group (UPF)

Oct 2016 - Jan 2021

- Thesis (cum laude): Responsive Spectrum Management for WLANs. Link.
- Research stay at Rice Networks Group in Rice University (Houston, United States).
- Teaching assistant for computer networks (10 semesters).

MSc, Intelligent and Interactive Systems at UPF **BSc**, Telematics Engineering at UPF (*Top of class*) Sep 2015 - Jul 2016

Sep 2011 - Jul 2015

SKILLS

Experienced in cloud-native telecom and datacenter systems, combining DevOps, MLOps, and AI-driven automation. Skilled in 5G/6G integration, sustainable testbed design, and multi-agent intelligent infrastructure management. Key technical skills include:

- Programming: Python, Java, C/C++, Go, Matlab, LaTeX
- AI & MLOps: LLMs, Ollama, RAG, multi-agent frameworks, CI/CD pipelines
- Cloud & DevOps: Linux, LXC, TCP/IP, Docker, Kubernetes, OpenStack, Ansible, Puppet, Prometheus, Grafana, Kafka Preparing for CKA certification.
- Telecom & 5G: Open5GS, Free5GC, OpenAirInterface, Amarisoft, SRS
- Collaboration & Workflow: Git, GitLab, Jira, Agile, Kanban, Scrum

Languages

Spanish (C2), Catalan (C2), English (C1), German (A2)

References

• Luis Sanabria-Russo, DevOps Engineer at O(1)

sanabriarusso@gmail.com

• Francesc Wilhelmi, Researcher at Nokia

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• Edward Knightly, Head of Networks at Rice University

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