

João Pedro Fonseca

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Experience

Iquadrat Informatica S.L.



SENIOR RESEARCHER

March 2024

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Capgemini Engineering



R&D CONNECTIVITY & NW ENGINEER

March 2022 - Feb 2024

- Architecture Design, Development, and integration of tailored solutions for several R&D Telecom projects, following industry standards:
 - OREOS
 - FLOYD
 - 6G BRAINS
 - Route 25
 - Imagine B5G
- Analysis of several Technical Reports and Specifications(eg: 3GPP, ETSI, TM FORUM, 5GAA) for architecture definition and implementation
- Writing and revision of several of the deliverables of the aforementioned projects
- Monitoring of students pursuing their Master Thesis at Capgemini Engineering

Instituto de Telecomunicações Aveiro



RESEARCH GRANT UNDER THE SCOPE OF THE H2020 5GROWTH PROJECT

October 2019-February 2022

- Design of the architecture for network slice orchestration across administrative domains under the 5Growth Project (funded by H2020)
- Analysis of several Technical Reports and Specifications(3GPP, ETSI) to improve the Network Slicing platform used by the 5Growth Project under the ICT-17 Integration group
- Contributions the 5Growth Project project deliverables
- Contributions to ETSI OSM MANO release 9 & 10
- Monitoring of bachelor and master students for faster interactions with the OSM software stack.

Education

University of Minho, Aveiro and Porto



MAP DOCTORAL PROGRAM IN COMPUTER SCIENCE

Aveiro 2021-Present

- PhD Thesis proposal: *Vertical-aware and Dynamic System Orchestration*
- Associated Research Projects: H2020 5Growth, CMU Portugal FLOYD project, P2020 OREOS, H2020 6G BRAINS

Universidade de Aveiro



MSC IN COMPUTER AND TELEMATICS ENGINEERING

Aveiro 2021

- Master Thesis on *5G Interdomain Orchestration Mechanisms for Flexible Vertical Services Deployment*, Grade 17/20.

ResearchGate

Vinia: Voice-enabled intent-based networking for industrial automation [ARTICLE](#)

CO-AUTHOR

Raul Barbosa et al., Vinia: Voice-enabled intent-based networking for industrial automation, in Computer Science and Information Systems 2024 Volume 21, 2023, doi: 10.2298/CSIS230213002B

Demo: Object detection under 5G-edge mobility [ARTICLE](#)

CO-AUTHOR

Marco Araujo et al., Demo: Object detection under 5G-edge mobility, Accepted at WoWMoM 2023, 2023, doi: 10.1109/WoWMoM57956.2023.00058

Demo: Enhancing Network Performance based on 5G Network Function and Slice Load Analysis [ARTICLE](#)

CO-AUTHOR

Rui Ferreira et al., Demo: Enhancing Network Performance based on 5G Network Function and Slice Load Analysis, Accepted at WoWMoM 2023, 2023, doi: 10.1109/WoWMoM57956.2023.00057

6G BRAINS Topology-Aware Industry-Grade Network Slice Management and Orchestration [ARTICLE](#)

AUTHOR

João Fonseca et al., 6G BRAINS Topology-Aware Industry-Grade Network Slice Management and Orchestration, Accepted at the 2023 EuCNC & 6G Summit, 2023, doi: 10.1109/EuCNC/6GSummit58263.2023.10188280

O-RAN and RIC compliant solutions for Next Generation Networks [ARTICLE](#)

CO-AUTHOR

João Fonseca et al., O-RAN and RIC compliant solutions for Next Generation Networks, Accepted at the NG-OPERA: Next-generation Open and Programmable Radio Access Networks workshop part of INFOCOM 2023, 2023, doi: 10.1109/INFOCOMWKSHPS57453.2023.10225994

OREOS: Demonstrating E2E Orchestration in 5G Networks with Open-Source Components [ARTICLE](#)

CO-AUTHOR

Noé Godinho et al., OREOS: Demonstrating E2E Orchestration in 5G Networks with Open-Source Components, Accepted at the INFOCOM 2023, 2023, doi: 10.1109/INFOCOMWKSHPS57453.2023.10226044

Hands-on Interdomain network slicing framework and evaluation [ARTICLE](#)

AUTHOR

João Fonseca et al., Hands-on Interdomain network slicing framework and evaluation, in Internet Technology Letters, 2022, doi: 10.1002/itl2.394

Dynamic Inter-domain Network Slicing for Verticals in the 5Growth Project [ARTICLE](#)

AUTHOR

João Fonseca et al., Dynamic Inter-domain Network Slicing for Verticals in the 5Growth Project, Accepted in the MOBISLICE IV workshop part of the IEEE NFV SDN 2021, doi:10.1109/NFV-SDN53031.2021.9665037

Multi-Domain Solutions for the Deployment of Private 5G Networks [ARTICLE](#)

CO-AUTHOR

X. Li et al., Multi-Domain Solutions for the Deployment of Private 5G Networks, in IEEE Access, vol. 9, pp. 106865-106884, 2021, doi: 10.1109/ACCESS.2021.3100120

Awards

Dec 2020 **Outstanding Technical Contributor(Release 9)**, ETSI OSM Community

Projects

ETSI-OSM(Open Source MANO) [LINK](#)

CONTRIBUTOR



- Patch bugs present on the Open Source NFV Management and Orchestration (MANO) software stack
- Give support to the community through the official channels
- Patch bugs related to the CI/CD solution used by the project

Awesome Hacking Locations [LINK](#)

MANTAINER

List of Awesome Hacking Locations, organised by Country and City, listing if it features power and wifi. Inspired by the Awesome Lists thing.

Presentations

Workshop: "Mastering the unofficial UA Thesis LaTeX Template" [SLIDES](#)

APR 2022, UNIVERSIDADE DE AVEIRO, AVEIRO

Workshop to help students of the University write their thesis quickly and without issues

Dynamic Inter-domain Network Slicing for Verticals in the 5Growth Project [SLIDES](#) [PRESENTATION](#)

NOV 2021, IEEE NFV-SDN 2021-4TH WORKSHOP ON MOBILITY SUPPORT IN SLICE-BASED NETWORK CONTROL FOR HETEROGENEOUS ENVIRONMENTS, ONLINE

Empowering verticals with autonomic service deployment by providing Interdomain support [SLIDES](#)

JAN 2020, 28º SEMINÁRIO DA REDE TEMÁTICA DE COMUNICAÇÕES MÓVEIS, LISBOA

Workshop: "O sistema de versões GIT" [SLIDES](#)

OCT 2019, DIA EDUCATIVO DA ESTGA ÁGUEDA, AVEIRO

Lectured a workshop on GIT, the version control system.

Technologies

Software Engineering

- Bugtracking and Development: Bugzilla, Gerrit, Jenkins and Git
- Deployment and Automation with Ansible, Juju Charms(Reactive and Native) and Bash scripting
- Virtualization: Docker and Docker-Compose, LXC
- Orchestration: Openstack and Proxmox
- Experience using \LaTeX for technical writing

Networking and Monitoring

- Network analysis: Wireshark, nmap, mtr, iperf
- DNS Security: Stubby

Linux/Unix

- Linux Distros: Antergos, Archlinux, Debian, Manjaro, Ubuntu, Fedora, CentOS
- Display Servers: Xorg, Wayland
- Btrfs Enthusiast
- Analysis and Debugging : SystemD(journalctl, dmesg)



GLUA - Grupo de Linux da Universidade de Aveiro

2017-PRESENT, SENIOR MEMBER AND FORMER COORDINATOR

- Providing Technical Support for the University of Aveiro community, in the University ICT department, on a weekly basis(2019-2020):
 - Installing incompatible drivers
 - Managing packages conflicts
 - Compiling specific Linux Kernels
 - Debugging issues with the WIFI configuration
 - others
- Maintainer for the GLUA's FOSS Public Mirror Service(glua.ua.pt/pub):
 - Configuration of nginx, rsync, etckeeper, and automatic notification email on service failure services
 - Developer of the Mirrors webpage(written in PHP)
- Human resources management within the GLUA's projects and initiatives responsible for the GLUA's projects.
- Organizer for workshops and talks promoting GLUA's team development on different subjects.

Erasmus Student Network - Aveiro



2016-2022, ERASMUS BUDDY

- Fomenting the integration of Erasmus students within Aveiro city and local costumes

AAUAV- Associação Académica da Universidade de Aveiro



2017 ,COLABORATOR

- Organization of activities on different areas of action(cultural, educational, etc).

ENEI- Encontro Nacional de Estudantes de Informática



ORGANIZING COMMITTEE(2014,2016) AND AMBASSADOR(2018,2019)

- Member of the team responsible for the logistics of the event
- Member of the team responsible for the Streaming the event

Núcleo de Estudantes de Engenharia de Computadores e Telemática-NEECT



2014-2017, CORE MEMBER

- Organization of Workshops and Talks amongst other events
- Organization of ENEI 2014 and 2016 events