João Pedro Fonseca

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Experience

Capgemini Engineering

R&D Associate Connectivity & NW Engineer   *November 2022 -Present*

- Architecture Design, Development and integration of solutions for several R&D Telecom projects:
  - OREOS
  - FLOYD
  - 6G BRAINS
  - Route 25
  - Imagine B5G

Capgemini Engineering

Associate Engineer R&D   *March - November 2022*

- Contributions to CMU Portugal Floyd Project
  - D2.2: Business models and stakeholders liaison
  - D3.1: Overall System Architecture
- Contributions to the OREOS Project
  - Study on O-RAN and RIC compliant Open-source solutions for Next Generation Networks
- Contributions to the 6GBRAINS project
  - Design of the Topology-aware Industry-grade Network Slice Manager
    (Integration of ONAP and UWS Slice Manager)

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
  - D2.1: Initial design of 5G End-to-End Service Platform
  - D2.3: Final Design and Evaluation of the innovations of the 5G End-to-End Service Platform
  - D3.5: Final version of software implementation for the platform
  - D4.4: Final validation and verification report
- Virtualization Infrastructure Management and Orchestration of several projects using Openstack, Docker, Proxmox, Juju Charms among other tools
- 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.

Publications

Demo: Object detection under 5G-edge mobility

CO-AUTHOR

Marco Araujo et al., Demo: Object detection under 5G-edge mobility, Accepted at WoWMoM 2023, 2023, doi: not yet available

Demo: Enhancing Network Performance based on 5G Network Function and Slice Load Analysis

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: not yet available

6G BRAINS Topology-Aware Industry-Grade Network Slice Management and Orchestration

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: not yet available

O-RAN and RIC compliant solutions for Next Generation Networks

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: not yet available

OREOS: Demonstrating E2E Orchestration in 5G Networks with Open-Source Components

CO-AUTHOR

Noé Godinho et al., OREOS: Demonstrating E2E Orchestration in 5G Networks with Open-Source Components, Accepted at the INFOCOM 2023, 2023, doi: not yet available

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 LaTeXfor 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)

Volunteering

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