

# ANDRÉ SILVA

PhD Student in Computer  
Science



Porto, Portugal



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mastersilvapt



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asilva-mastersilvapt

## PROFESSIONAL SUMMARY

- PhD student with 4+ years of hands-on experience in networking, Linux, datacenter and hardware, developed in parallel with my studies.
- Network design and operations: VLANs, routing (OSPF, BGP); platforms and tooling incl. MikroTik, pfSense, VyOS.
- Platform operations: Proxmox + Ceph, OpenStack, Kubernetes, Docker; automation with Ansible, Bash, Python.
- Security hardening: exam mode improvements; firewall misconfiguration fixes; DNS tunneling for covert data infiltration and exfiltration.
- Teaching experience: Computer Networks and Imperative Programming at the University of Porto.

## EDUCATION

### Faculty of Sciences of the University of Porto

DOCTORAL PROGRAM IN COMPUTER SCIENCE

Porto, Portugal

09/2024 - present

### Faculty of Sciences of the University of Porto

MSC IN INFORMATION SECURITY — FINAL GRADE: B (17/20)

Porto, Portugal

09/2022 - 07/2024

### Faculty of Sciences of the University of Porto

BSC IN COMPUTER SCIENCE — FINAL GRADE: A (17/20)

Porto, Portugal

09/2019 - 07/2022

### Escola Secundária Eça de Queirós

HIGH SCHOOL IN SCIENCES AND TECHNOLOGIES

Póvoa de Varzim, Porto, Portugal

09/2016 - 08/2019

## PROFESSIONAL EXPERIENCE

### FCUP

VISITING ASSISTANT PROFESSOR

Porto, Portugal

09/2024 - present

- Computer Networks at the Faculty of Engineering, University of Porto
  - Serial connections
  - TCP/IP stack
  - Linux routing
  - MikroTik switching and routing
- Imperative Programming at the Faculty of Sciences, University of Porto
  - Introduction to C; memory (stack/heap); pointers and structs
  - Introduction to data structures (linked lists, queues, stacks)

### FCUP

VISITING ASSISTANT PROFESSOR

Porto, Portugal

09/2023 - 02/2024

- Computer Networks at the Faculty of Engineering, University of Porto
  - Serial connections
  - TCP/IP stack
  - Linux routing
  - MikroTik switching and routing

### C3P, UP

SYSTEM ADMINISTRATOR

Porto, Portugal

2023 - present

- Datacenter and hardware maintenance



## ABOUT ME

PhD student with 4+ years of hands-on experience in networking, Linux, datacenter and hardware, developed in parallel with my studies. Passionate about building and operating reliable systems.

## SKILLS

C; Java; Bash; Linux

Netgear; HP

Proxmox; Ceph; Python; Ansible

MikroTik; Cisco; pfSense; VyOS

Docker; Kubernetes; OpenStack

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## LANGUAGES

Portuguese • Native

English • Fluent (B2 Equivalent)

## HOBBIES

Home Lab, Programming, Gaming

## NON PROFIT

- Student associations, 3 years (Member, Treasurer)
- Monitoring Committee of the BSc in Computer Science at FCUP
- Discussion group to improve integration in the university environment

- Proxmox + Ceph
- OpenStack
- Kubernetes
- Network administration — design, switching, routing, VLANs, OSPF, BGP
- Task automation: Ansible / Bash / Python

## Labcc, DCC, FCUP

SYSTEM ADMINISTRATOR INTERN

Porto, Portugal

10/2022 - 09/2024

- Datacenter and hardware maintenance
- Proxmox + Ceph
- Network administration — design, switching, routing, VLANs
- Task automation: Ansible / Bash / Python
- Hardened an exam mode; identified and fixed security issues including:
  - Firewall misconfigurations allowing external communication
  - DNS tunneling for covert data infiltration and exfiltration

## DCC, FCUP

UNDERGRADUATE RESEARCH SCHOLARSHIP

Porto, Portugal

04/2022 - 08/2023

- Privacy awareness
- Developed and tested an Android application
- Android permissions

# PERSONAL PROJECTS

## Home Lab

HOME SERVICES

Porto, Portugal

2021 - present

- Docker (2021–2023)
- Kubernetes multi-node with GPU (2023–present)
- Certificate manager with auto-renewal
- Jellyfin and Plex with GPU transcoding
- Immich with GPU context and face recognition
- PDF editor
- Uptime monitoring (local tools)
- NGINX Ingress Controller
- Authentik
- NFS, Samba
- Segregated network
- Wi-Fi 802.1X with VLAN assignment (RADIUS)
- Edge router + pfSense + OSPF
- WireGuard
- Proxmox + Ceph
- Home Assistant

## Home Lab

SELF-BUILT VIDEO EDITING SERVER

Porto, Portugal

2025

- Selected and purchased all components; assembled the server from scratch
- OS: TrueNAS SCALE
- Storage: 4 TB NVMe (RAID 1) production pool; 8 TB HDD (RAID 1) archive pool
- Network: 2.5GB/s
- Throughput: up to 300 MB/s over SMB to the production pool

# COLLEGE PROJECTS

## Theory and Practice of Security Attacks, FCUP

PENETRATION TESTING

Porto, Portugal

10/2022 - 01/2023

- Coursework at FCUP

## Network Security, FCUP

IN-VEHICLE NETWORKS

Porto, Portugal

10/2022 - 12/2022

- CAN networks

## Privacy Enhancing Technologies, FCUP

PRIVATE SET INTERSECTION

Porto, Portugal

10/2022 - 12/2022

## Security Operations, FCUP

SECURITY OPERATIONS (SOC)

Porto, Portugal

09/2022 - 12/2022

- DNS poisoning

- SSH MITM
- Filebeat

### Privacy Enhancing Technologies, FCUP

DATASET ANATOMY: Crimes no Brasil

Porto, Portugal

09/2022 - 10/2022

### Concurrent Programming, FCUP

CHASE

Porto, Portugal

04/2022 - 06/2022

- Concurrent HashSet
- Java

### Concurrent Programming, FCUP

SiPoSo

Porto, Portugal

03/2022 - 04/2022

- Simple Polynomial Solver
- Polynomial calculations; factorial; primality; Fibonacci; Maclaurin series
- Erlang; distributed computing

### Communication Networks, FCUP

CHAT OVER TCP

Porto, Portugal

10/2021 - 01/2022

- Server implementation and GUI client
- Java

### Compilers, FCUP

TIGER-0 TO MIPS COMPILER

Porto, Portugal

09/2021 - 01/2022

- High-level Tiger-0 to MIPS assembly
- Lexer in Alex
- Parser in Happy
- Intermediate representation in Haskell
- Assembly generation in Haskell
- Haskell; MIPS assembly

### Artificial Intelligence, FCUP

SUPERSET

Porto, Portugal

05/2021 - 06/2021

- Predict results of speed dating
- R programming language

### Mobile Device Programming, FCUP

VANGUARD

Porto, Portugal

02/2021 - 06/2021

- Chat over Bluetooth; central server for posts and comments
- Java; PHP

### Artificial Intelligence, FCUP

RASIPOGE

Porto, Portugal

02/2021 - 05/2021

- Random Simple Polygon Generator
- Small TSP
- Java; Bash

## HONORS

2019 **ESEQ**, Honor Roll

Povoa de Varzim,  
Porto, Portugal