David Araújo

Cybersecurity Master's Student and Graduate Researcher

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Education

University of Aveiro   Aveiro, PT
M.S in Cybersecurity   09/2023 - Present
B.Eng. in Computer Science and Telematics   09/2018 - 07/2023

Experience

Graduate Student Researcher   09/2023 - Present
Instituto de Telecomunicações
- Improve non-5G devices authentication and authorization (AA) mechanisms and support for legacy device in 5G networks, as its functions require devices to have 5G credentials.
- Stress testing and development of resilience improvements of TeraFlowSDN cloud-native architecture.

Undergraduate Student Researcher   11/2022 - 07/2023
Instituto de Telecomunicações
- Inserted in the FireTec project, my position was created with the intent of adding CAP (Common Alert Protocol) communication support to the existing infrastructure. (see 1)

Skills

Programming Languages: Go, Python, Rust, JavaScript, Java, C, Zig, Bash
Tools and Frameworks: Git, Ansible, Terraform, Docker, Vagrant, Kubernetes, MSSQL, SQL, GraphQL, AWS, Google Cloud, Prometheus, Grafana
Cybersecurity Skills: GRC, Risk Assessment, IAM Management, Threat Modelling, IS Auditing, SSDLC, SAST, DAST, Vulnerability Management, API Penetration Testing, Threat Hunting
Languages: Portuguese (native), English (proficient)

Projects

Reverse Engineering - PDF Manager Malicious Android Application   2024
- Analysis of the PDF Reader File Manager application. This was developed with the intent of stealing data from Android users, as described in this article.

Flexible, Risk Aware Authentication System   2024
- Design and implementation of an Identity Provider (IdP) using the OAuth 2.0 protocol, and three client services which use it for authentication and authorization.

Enhanced DES (E-DES)   2023
- Implementation of a DES variant known as E-DES, using a 256-bit key, derived from a user-provided password and S-boxes derived from the key, instead of using fixed and known S-boxes.

Deterministic RSA key generation (D-RSA)   2023
- Deterministic RSA key generation and implementation of a pseudo-random number generator and RSA key generator

Certifications

Blockchain Security Specialization, Infosec   07/2024
Cyber Incident Response Specialization, Infosec   07/2024
Cyber Threat Hunting Specialization, Infosec   07/2024
Information Systems Auditing, Controls and Assurance, Hong Kong University   07/2024
API Penetration Testing, APIsec University   09/2023

Publications

1. **A Low-Cost Embedded System to Support Broadcasting Emergency Messages rough FM Radio Stations**
   M. Coelho; L. Santiago; D. Araújo; A. Navarro; N. B. Carvalho
   IEEE Embedded Systems Letters, vol. 16, no. 3, pp. 247-250, Sept. 2024