

# Roberto Vasconcelos



React Native | React – Next.js | Node  
Developer

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## About me

To obtain a challenging and rewarding role that allows me to expand my knowledge and skills while making a meaningful contribution..

## Personal Information

Gender: Male

Nationality: Brazilian

Date of birth: 11.04.1988

Language: Portuguese English Spanish

## Education

Federal University of Sergipe

Aug 2016 – Dec 2018

Master's degree, Computer Science

- Master's dissertation: Immunological Security Approach Nased on Alert Correlation and Software Defined Networks Published Papers: – [ISM-AC: an immune security model based on alert correlation and software-defined networking](<https://link.springer.com/article/10.1007/s10207-021-00550-x>) – [A Novel Immune Detection Approach Enhanced by Attack Graph Based Correlation](<https://ieeexplore.ieee.org/document/8969772>) – [A Cloud Immune Security Model Based on Alert Correlation and Software Defined Network](<https://ieeexplore.ieee.org/document/8795367>)

Federal University of Sergipe

Mar 2007 – Jul 2015

Bachelor's Degree in Computer Science

## Skills

Javascript

Typescript

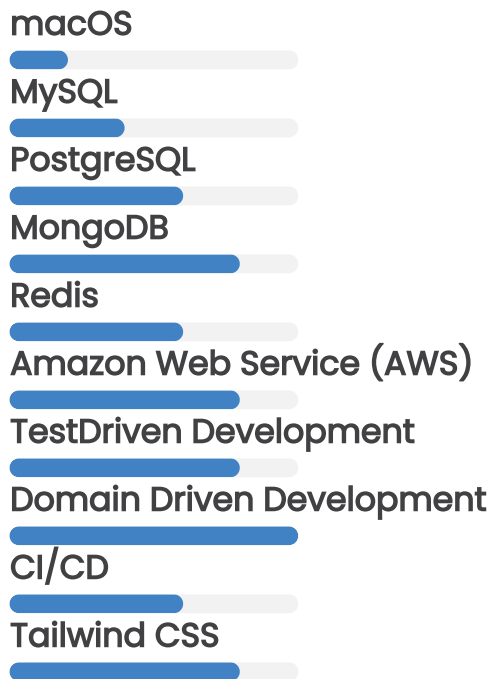
ReactJS

React Native

Node.js

Linux

Windows



## Work Experience

<b>Hu Innovations</b> Full Stack Developer	<b>May 2022 – Continue</b>
• Full stack developer using the stack of ReactJS, React Native and NodeJS	
<b>Ma9 Soluções em Tecnologia</b> React Native developer	<b>Dec 2019 – Jul 2020</b>
• Mobile application developer for the financial market	
<b>Federal Universitária of Sergipe</b> Programming Teacher	<b>Dec 2017 – Jun 2018</b>
• I taught the concepts of imperative programming using the C language	
<b>Aracaju City Hall</b> Web Developer	<b>Dec 2011 – Dec 2012</b>
• Internship as a web developer	

## Projects

<b>Finder</b>
• Social network based on the Black Mirror series, where it's possible to find and rate nearby Instagram profiles.
<b>Middle</b>
• Application that allows connection between athletes, agents, and clubs in the world of football

## Publications

<b>ISM-AC: an immune security model based on alert correlation and software-defined networking</b>	<b>May 2021</b>
Roberto Vasconcelos Melo, Douglas D. J. de Macedo, Diego Kreutz, Alessandra De Benedictis & Mauricio Martinuzzi Fiorenza	

- Anomaly-based detection techniques have a high number of false positives, which degrades the detection performance. To address this issue, we propose a distributed intrusion detection system, named ISM-AC, based on anomaly detection using artificial immune system and attack graph correlation. To analyze network traffic, we use negative selection, clonal selection, and immune network algorithms to implement an agent-based detection system. ISM-AC leverages the programmability of software-defined networking to reduce the false positive rate. Our findings show that ISM-AC achieves better detection performance for denial of service, user to root, remote to local, and probe attack classes. Alert correlation plays a key role in this achievement.

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## **A Novel Immune Detection Approach Enhanced [Jan 2020](#) by Attack Graph Based Correlation**

**Roberto Vasconcelos Melo; D. J. Douglas de Macedo; A. R. Mario Dantas; C. E. Luis de Bona**

- Artificial immune systems (AIS) are computational intelligence inspired by the human biological immune system. The AIS four main algorithms are negative selection, clonal selection, immune network, and danger theory. This paper incorporates the AIS approach to develop an agent-based detection method to analyze network traffic. The system works with an attack graph based correlation technique. This technique can improve detection performance by decreasing false alerts. This work was tested for denial of service (DoS), remote to local (R2L), user to root (U2R) and probe attack classes. Results have shown the addition of the correlation technique can aid to the detection performance of AIS detection systems.

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## **A Cloud Immune Security Model Based on Alert [Aug 2019](#) Correlation and Software Defined Network**

**Roberto Vasconcelos Melo; Douglas Macedo**

- In this paper, we explore the AIS approach to develop an agent-based detection method to analyze network traffic. The system works in conjunction with attack graph based correlation and software-defined network (SDN) technology to mitigate attacks. In the correlation technique, alerts are correlated through an attack graph which improves detection performance by decreasing the false alert rate. The false alert reduction can avoid the negative effect that an SDN countermeasure can bring to the cloud Service Level Agreement (SLA) on the absence of threats. This work was tested for multi-step and distributed denial of service (DDoS) attacks. Results have shown the addition of the correlation technique can aid to the detection performance of AIS detection systems.