Jordan Alexis Caraballo-Vega
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B.S. Computational Mathematics
University of PR at Humacao
EXP GRAD: Dec 2019 GPA: 3.88

PROFESSIONAL EXPERIENCE

Software Developer & IT Security Specialist, NASA Goddard Space Flight Center – NCCS HPC Security Team (2016-Present)

- Responsible for the engineering of software and information systems to support log analysis infrastructure for anomaly detection.
- Lead System Architect and Administrator of DevSecOps infrastructure.
- Responsible for performing source code and pen-testing reviews to web-based software for the NCCS production systems purposes.
- Serve as a Linux, Unix, and Windows servers system administrator for security and resource intensive systems.
- Responsible for advancing research on a low cost 100 Gbps firewall at the NASA Center for Climate Simulation.
- Responsible for developing a novel automated method to assess, track, and report the status of compliance and vulnerabilities using SCAP.

Computational Research Assistant - PREM UPR-Humacao – Partnership for Research and Education in Materials (2013-Present)

- Lead 5 Undergrad students of the UPR-Humacao Computer Science Group.
- Responsible for developing and implementing software for computational simulations towards HPC environments.
- Manage and coordinate, independently, software and hardware updates and patches.
- Assist and collaborate with ongoing research projects related to data mining, clustering, image processing, machine learning, and HPC.
- Perform well-defined tasks of a developmental nature such as design, evaluation, and analysis of software and hardware architectures.
- Serve as Linux and Network system administrator for virtual environments and GPU systems.

SKILLS and EXPERTISE

Programming Languages: Python, Perl, C++, Java, Bash, SQL, HTML, CSS, PHP, Javascript
Security Skills: Risk Assessments, Compliance and Vulnerabilities, Software Review, Log Analysis (ELK), Network Performance Benchmarking, Network Switches, Hardware Tuning, Network Cards (1, 10, 40, 100 Gbps), Penetration Testing, DevSecOps.
Computing Skills: Machine Learning, Data Mining, Web-scrapping, MD Simulations, HPC Data Transfer, GPU Computing.
Operating Systems: System Administration of Linux, Unix, Windows R2, FreeBSD.

SELECTED COURSEWORK

Programming I & II, Data Structures & Algorithms, Assembly Language, Databases, Web Development, Operating Systems
Data Science and Machine Learning Certificate, University of PR Medical Sciences Campus, San Juan.

SELECTED Research Projects

06/18-12/18, Continuous Assurance: Continuous Integration Meets Containers Security, NCCS-GSFC
- Built an autonomous continuous integration infrastructure enhanced by multiple security layers to enable monitoring and security scanning engines in each phase of the DevOps project cycle. Serve as a system administrator of the infrastructure.

06/17-08/17, Machine Learning Techniques for Security Information and Event Management, NCCS-GSFC
- Developed and implemented a machine learning aware ELK+ Graylog infrastructure with Security Information and Event Management (SIEM) features for log analysis and anomaly detection. Serve as a system administrator of the infrastructure.

08/16-12/16, Building Cost Effective High Performance 100 Gbps Firewalls, NCCS-GSFC
- Enhanced existing firewalls by tuning the systems to balance workload for routing million of small frames (64 bytes) packets per second while achieving good bandwidth numbers at 9000 MTU. Developed software over DPDK and Netmap aware applications.

06/16-08/16, An Automated SCAP Security Tool, NCCS-GSFC
- Developed tool to continuously monitor operating systems regarding Compliance and Vulnerabilities assessments. Features include: OpenSCAP and CIS-CAT, time series analysis, identification of critical rules, and a reporting pipe for Nagios interface.

PEER REVIEWED PUBLICATIONS

- Abstract: Caraballo-Vega, J. (2018) Millions of Messages per Minute! Surviving the NCCS's Log Avalanche, Published Demo.
- Abstract: Caraballo-Vega, J. (2017) *Cybersecurity Machine Learning*, Published Demo.
- Abstract: Caraballo-Vega, J. (2016) *Building Cost Effective High Performance 100 Gbps Firewall*, Published Demo.
- Paper: JAC, Mir., F. M. (2014). *Molecular dynamics simulation of electrodes for capacitors made with nano-onions*, NCUR.

SELECTED AWARDS

- 07/28/17 John Mather Scholarship Awardee
- 06/26/15 NASA MUREP Scholarship
- 05/26/15 Brystol Myers Squib Excellence in Science and Math Scholarship
- 08/20/14 Partnership for Research and Education in Materials Fellowship