

Alejandro Efrain Gonzalez Araya, Software Engineer

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PROFILE

Areas of Interest: Cloud/Edge computing & infrastructure · Container orchestration technologies · Performance, efficiency, capacity planning and scaling · Infrastructure provisioning automation · IoT · Big Data · RISC-V

Hands on experience in Container and orchestration technologies (Docker/Podman/Kubernetes) · Virtualization Infrastructure (VMware ESXi/OpenStack) · Linux Kernel configuration and building.

Experienced in Java/JavaEE · RHEL/Debian Linux · C Embedded Programming · Bash Scripting · Python · Computer networks · Hadoop-Spark · NoSQL/SQL · ML/DL frameworks · IoT Architecture · REST · MQTT

EMPLOYMENT HISTORY

- Aug 2017 — May 2021 **Research assistant, University of Puerto Rico, Mayaguez** Mayaguez, Puerto Rico
- Edge Computing: Resource provisioning for mobile ARM64 devices using container live migration.
 - Cloud Computing: *Improving Virtualized Data Center Resource Efficiency Using Dynamic Container Placement Strategies*. (Container Live Migration and Machine Learning)
 - Software Defined Networks: Cloud computing infrastructure design and development to test software defined networks.
 - Cloud Computing Using Embedded Devices: Performance analysis of virtualization techniques on ARM devices.
- Teaching assistant**
- Operating Systems course (4 terms): Developed new laboratory assignments on Concurrency, Synchronization, Kernel Scheduling, Kernel Memory Management, Kernel Modules and Drivers
 - Advanced Programming course (1 term)
- May 2019 — Aug 2019 **Digital Combat Systems Intern, Department of Navy (NAVSEA)** Dahlgren, Virginia
- Designed and developed automation software for the deployment of realtime performance monitoring tools for distributed virtualized tactical systems.
 - Developed technical documentation for the installation and configuration of the developed software as well as provided training to the Virtual Test Environment (VTE) Lab team on how to operate said software.
- Aug 2018 — Dec 2018 **Business Analyst, Excellere Consulting Associates Inc.** San Juan, Puerto Rico
- Gather project requirements, handle organizational dependencies, identify risks and organize project development workflow for Claro PR.
- Feb 2017 — Jul 2017 **Software Developer Analyst, Netwave Equipment Corp.** San Juan, Puerto Rico
- Correction and Rehabilitation Department Systems Development.
 - Application and database design and development. (MSSQL, ASP.NET, Oracle DB)
 - Database analysis and performance optimization.
- Jun 2013 — Aug 2016 **Software Developer, Nustream Communications Inc.** San Juan, Puerto Rico
- Health Insurance Administration Systems development. (Java, MySQL, Bash, Linux)
 - Development of new modules and database to support new health insurance regulations.
 - Data structures and algorithms performance analysis and optimization.
- Jan 2012 — Jan 2015 **System Administrator, Zelig Inc.** San Juan, Puerto Rico
- Deployment and administration of Linux Hosting server for e-commerce store.
 - Development of e-commerce store. (PHP, CSS, HTML, MySQL, WordPress)
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PUBLICATIONS

A. Gonzalez, E. Arzuaga “*HerdMonitor: Monitoring Live Migrating Containers in Cloud Environments*” 2020 IEEE International Conference on Big Data (Big Data), 2020

EDUCATION

- Aug 2017 — Jun 2021 **MS Computer Engineering, University of Puerto Rico, Mayaguez** Mayaguez, Puerto Rico
- Master Thesis:** *Distributed Resource Provisioning for Containers Using Machine Learning and Live Migration*.
Designed and developed a container orchestration platform for resource provision of cloud/edge environments.
- Aug 2010 — Dec 2016 **BS Computer Engineering, University of Puerto Rico, Mayaguez** Mayaguez, Puerto Rico
- Capstone:** *DynoCloud: Internet-of-things Pet Habitat monitoring and control system*.