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Work History

Universidad Católica de Colombia (2015/03 – 2019/12)

Position: Assistant Professor

Tasks: Lecture Task

- Project Advisor on Bachelor Degree Projects
- Director of SMART, Student research group in Infrastructure and Services
- Professor at the computer science department:
 - Computing Distributed Systems
 - Big Data and Analytics Computing Tools
 - Network Design and Convergent Services
 - Data Structures and Object-Oriented Programming
 - Algorithm Analysis and Design

Project: Create a system for a measurement in Bogotá. (2019)

- Design an architecture able to process real time data from multiple sources.
- Create a backend technology blueprint to connect to Google API to deliver location data with insights from data
- Develop Services Component and API to use external and internal services

Technologies: JAVA, JPA, Python, MySQL, Micro Services, Angular, MongoDB.

Project: Configurable analytics platform for public social media and Internet data (2017-2018)

- Creation of a parametrizable components for data extraction in social media platforms (Twitter, Facebook) using (Python and PHP) for Public API communication and JAVA for transactions and database communication.
- Creation of a Clusterization and Classification modules with the purpose of analyze data from social media, using R Server for processing engine and Python for database communication and data manipulation.
- Creation of a Visualization module for parametrizable 2D Charts using NodeJS as a dashboard manager.

Technologies: JAVA, JPA, MySQL, MongoDB, Python, PHP, R Server; NodeJS, Micro Services, Hadoop Ecosystem, ETLs

Project: Container System for Serious Games (2015-2016)

- Create a Game Lifecycle to be controlled by the container.

- Develop an archetype structure for a Unity based game to run using web technologies
- Create a ranking system with the data result from the games and using a user module
- Develop a User module using Liferay container utilities
- Deploy components using liferay.

Technologies: JAVA, JPA, HTML+CSS, Unity (Basic), bootstrap framework

Pontificia Universidad Javeriana (2013 – 2019)

Position: Lecturer (Itinerant)

Tasks: Lecture Tasks

- Lecturer in High Performance Computing Course – Master in Computer Science and Master in Analytics - (2016, 2017, 2018, 2019)
Class at a master levels in with the subjects are: Non-Relational Databases, In Memory Processing with Spark, and Data Processing using Hadoop Ecosystem
- Project Advisor on Bachelor Degree named: Tool for the Information Security Policies Compliance in Organizations (2014)
- Technical Interventor in Government Contract (Supervising the installation of a Computing Cluster using LSF, Infiniband network technology and GPU Processing Cards (2013)

Technologies: Hadoop Ecosystem, Spark, MongoDB, Java, Python, ETLs.

Pontificia Universidad Javeriana (2016/10 – 2017/11)

Position: Architecture Director

Project: CAOBA Alliance - Big Data y Data Analytics Excellence Center

Tasks: In charge of the definition for the technical standards, the reference architecture for the projects and his associated components and lead the technology related processes applying the reference standards defined.

- Create a hybrid cloud architecture to give support to the development environment and the client services, using Power8 and Intel Infrastructure and OpenStack as a Cloud Provider, Chef as an auto-configurable services tool.
- Collaborate with architecture, code review, deployment and quality assurance of:
 - Segmentation Clients using twitter API and clusterization methods sign communication through flask micro-services.
 - Visualization Dashboard for traffic data for Bogota district secretary using geo-data analytics in ETL's based on Java and NodeJS
 - Risk prediction for Enterprise clients for a Colombian Bank using Clusterization methods in a ETL and a Java UI to visualize data.

Technologies: JAVA, Python, Flask MicroServices, MongoDB, RedisDB, OpenStack, Atlassian Suite, ETL's, spark, Hadoop Ecosystem. ETLs.

RENATA (Colombian NREN) (2013/01 - 2014/03)

Position: Chief Technology Officer

- Coordination and leadership in connectivity systems, routers, last mile links with regional networks, international connectivity and the national ring, data center for the RENATA services, and technical staff.
- Leadership in the implementation and the adoption of the IPv6 Project in Colombia.
- Participation and national representation in the technical commission of RedCLARA (ClaraTEC), and Coordination on the RENATA national technical committee.
- Participation and coordination in the development of international collaboration network projects (NREN's) on Latin America, United States and Europe
- Planning, Coordination, Implementation and production transition of the RENATA services (COLFIRE, eduroam, m-labs (sponsored by google) and national adoption strategy.
- Leading of Technical team formed by 12 IT Professionals

Technologies: PHP, JAVA, HTML+CSS, MySQL, Tomcat, Oracle Rack, Virtualization

Pontificia Universidad Javeriana 2012/03 – 2013/01

Position: Technical Coordinator

Project: ZINE High Performance Computing Center (zine.javeriana.edu.co)

Tasks: Creation and support for the High-Performance Computing Center infrastructure.

- Design the High-Performance Computing Center services architecture from scratch. (Web Based Services (portal, wiki, helpdesk), HPC LRM's, Application Test Beds,
- Install, build, configure, operate and monitoring the High-Performance Computing infrastructure (HTCondor, LSF queues)
- Installation and support of HPC Apps (Blast, R Server, Octave, NAMD, MrBAYES, AUTODock, among others).
- Working with the researchers developing parallel applications for running in the nodes in MPI, Java, Basic C, using LRM (HTCondor and LSF) with bash scripts
- Coordination of the High-Performance Computing Center staff.

Technologies: C++ (MPI), JAVA, Bash, PHP, Linux, HTCondor, LSF, HPC Apps.

RENATA (Colombian NREN) (2011/04 - 2013/01) (Last 7 months half time)

Position: Advanced Computing Community Coordinator

Project: Grid Colombia Initiative (NGI)

Tasks: Integrate Universities and Research Centers to the National Compute Infrastructure using RENATA Network.

- National Liaison for certification authority (CA DOEGrids).
- Grid Computing Senior Technical Instructor in Administrator and User national replication courses.
- Installation of RSV, WMS Services for national infrastructure using VDT Software stack.
- Leadership in the Infrastructure group, Policies generator for the usage, design, monitoring and governance of the HPC systems.

- Working with the researchers in coding applications for running in the national nodes in MPI, Java, Basic C, using LRM (HTCondor) with bash scripts
- Concept test cases for the integration of the European Infrastructure Stack (EMI Software).

Technologies: C++ (MPI), JAVA, Bash, HTML+CSS, PHP, Linux Administration, Grid Software Stack (VDT and EMI)

Pontificia Universidad Javeriana (2011/02 – 2012/01)

Position: Lecturer (Itinerant)

Tasks: Lecture Tasks

- Algorithm Thinking Professor on 2011 and 2012 Courses
- Project Advisor on Bachelor Degree named: Long Term Scheduler for the administration on OSG Grid Computing Nodes

Pontificia Universidad Javeriana 2010/02 – 2011/03

Position: Researcher Assistant

Project: Grid Colombia Project (National Grid Initiative)

Tasks: Responsible for creation a Grid Computing infrastructure between Javeriana University and Los Andes University using RENATA Network Infrastructure of the leadership and design of the infrastructure area.

- Responsible for the creation, installation and configuration of a Grid Infrastructure using OSG Software Stack (VDT (OSGUI, CE, GUMS, VOMS, CA))
- Creation and documentation of test cases for grid computing nodes in Java, C++, Bash Scripting.
- Creation of an Operation Center System for the National Grid Initiative
- Technical support for the installation and configuration of regional infrastructures based on OSG Consortium Stack.
- Project Technical Instructor for replication courses
- Installation of gridcolombia.org services (portal, wiki, helpdesk, moodle, etc)
- National Liaison for certification authority (CA DOEGrids).
- Leadership and mentoring of regional research assistants

Technologies: C++ (MPI), JAVA, Bash, HTML+CSS, PHP, Linux, Grid Software Stack (VDT and EMI), MySQL, Tomcat.

Aplicaciones SA: 2007/01 – 2009/10

Position: Intermediate Developer

Project: Company Back-Office Server Infrastructure

Tasks: Responsible of the leadership and design of the infrastructure area.

- Design of a private Cloud to host the Client services
- Installation and support (Solaris and Linux)
 - Solaris hypervisors (LDOMS, Containers)
 - Storage Infrastructure based on ZFS File Systems
 - Internal Solaris Thin Clients for Developers
 - Internal Company Services (LDAP, Proxy, CVS, Atlassian Suite, continuum)
 - Company Domain (Active Directory)

- Automation of all IT processes
 - Design and creation of Company Backups Policies (Tape Drives)
 - Supervision of staff and task planning
- Product:** Liberty Insurance Company Cashier Web Application
- Task:** Responsible for the development of Payment Polices.
- Code Pair Review for other application modules
 - Software concept test based on websphere AS
 - Building CRUD Operations in JPA, EJB and JSF technologies
 - Creation of Junit Test for Continuous Delivery platform
 - Integration with other modules for policies application
 - Deployment in JBOSS Containers
- Technologies:** -Hibernate, EJB, JavaScript, Java Server Faces, HTML+CSS, Solaris, Linux, MSSQL, MySQL, CVS, Oracle and JBOSS, Atlassian Suite.

Personal Projects and Other Projects

Entrepreneur Experience

IT++ - IT PLUS PLUS SAS 05/2014 to 05/2015

Position: Founder

Tasks: Start-up in charge of give consulting services in the IT area (Operation, design, and building of continuity business services and highly scalable applications, especially High-performance Computing platforms:

- With partnership of a multinational, design of a cyberinfrastructure for the handling and processing of all scientific task, for a Ciudad Yachai Project, with the Ecuadorian Government.
- Design of a network region-wide for a ICT project in the Huila Department for the connection of a high schools to a high speed network.
- Implementation of a system for the authentication of 36k users for an ICT in the Huila Department using single-sign on open protocols.

Consultant and Freelance Experience

BSA Lawyer Buffet

Role: Consultor

Project: Fixing network issues and growth re design - 2015

Tasks: Properly setup a dhcp server to ensure user functionality, redesign of the entire network for more resources and new business line of work and implementation of VPNs and other services, also an electrical grid diagnosis

Caribbean Autonomous University

Role: Consultor

Project: Grid Computing Node for Scientific applications 11/2011

Tasks: Installation of the OSG Software Stack and creation of a monitoring scripts for infrastructure automatization, at the end a little seminar in how to use the computation power and administrate resources.

Aktiba Marketing BTL

Role: Freelancer

Project: Campaign "Terpel on the Way – Terpel" 06 to 08 of 2011

Tasks: Software development of an android application for tablets which drivers, can play a game and give an experience about returning save to home.

Project: Campaign "Against Child Work – Telefonica Foundation" 06 to 08 of 2011

Tasks: Software development of an android application for tablets which control personal, interviews for a conscientization campaign against child work.

Project: Campaign "Renault Twingo – Telefonica Foundation" 05 to 10 of 2010

Tasks: Software development of several web applications for the campaign requirements, giving information about clients, purchased products and on on-line raffle with client data properties

Project: Campaign "World of Prices- Telefonica Foundation" 03 to 07 of 2010

Tasks: Software development of several web applications for the campaign requirements, giving information about clients, purchased products and on on-line raffle with client data properties

Personal Projects

Project: **Creation of an E-Sports Group and Software Utilities** 2019

Tasks: Leading the creation of the university team for E-Sports competitions (bylaws, hierarchy, social media presence and training schedule), also Creation of a web application for tracking the player improvement between the training session and competitions.

Project: **Creation of Community web Portal** 2008 to 2011

Tasks: Develop of a web portal and later using a CMS for display information for a community in the Bogotá context, (web, forums, radio streaming service, etc.).

Project: **D&D Utilities Package** 2008

Tasks: Develop of standalone JAVA applications for different in-game purposes in which stands create characters for campaign proposes and random generation of and NPCs

Education

Master in Computing and Systems Engineering – High Performance Computing
Pontificia Universidad Javeriana – 2016 – Colombia

Bachelor in Computer Science – Graduated with Honors
Universidad de Santander – 2006 – Colombia

Languages

Language	Write	Read	Talk
Spanish	Native	Native	Native
English	B2	B2	C1
Japanese	Low	Low	N5

Certificates, Courses & Qualifications

- Arcitura Member (AITCP ID) No. 107232
- B90.02 - Big Data Analysis & Technology Concepts - Certification
- B90.01 – Fundamental Big Data – Certification
- Coursera 2015 - R Programming
- Coursera 2015 - The Data Scientist's Toolbox
- COL/2014 - Interconnecting Cisco Networking Devices, Part 2 (ICND2)
- COL/2014 - Interconnecting Cisco Networking Devices, Part 1 (ICND1)
- COL/2012 - School for the deployment of federated identity services
- CZ/2012 - EMI 2 Matterhorn - Tutorial for system administrators
- CZ/2012 - CHAIN Interoperability Workshop
- COL/2012 - CHAIN/GISELA School for Application Porting to Science Gateways
- COL/2011 - Instructor Training for GridColombia Intermediate User
- EEUU/2012 - OSG Summer School 2011 (Condor y CondorG)
- COL/2010 - OSG Workshop Grid Colombia
- COL/2010 - Management Abilities Workshop
- COL/2008 - (SA-200-S10) Intermediate System Administration for the Solaris 10

Research Products

- **Article:** Theory of Games and Neuroeconomic Applied to Shopping in E-Commerce: International Journal of Grid and Utility Computing (Q2) (Accepted)
- **Article:** Model of an architecture based on academic opportunistic resources using a federated cloud approach in Universities: ICITS'19 - The 2019 International Conference on Information Technology & Systems N17 - ISSN: 1646-9895 (Q3).
- **Book:** Data Science: a practice guide for Engineers: June of 2018 In Editorial Process
- **Software:** Multi-Dimensional Platform for Social Media Data: Data Visualization Module – Sept of 2018
- **Software:** Multi-Dimensional Platform for Social Media Data: Extraction and Storage of Twitter data related with political violence Module – Sept of 2017

- **Article:** Study of the ADSI Program results in the Financial Center and his commitment and relevance for a national problematic – Segundo Simposio de Calidad en Educación y Pertinencia - Medellín 11/15
- **Article:** Self-Healing System in a multi-agent approach for the monitoring and trouble shooting in a technological distributed infrastructure - CONGRESO INTERNACIONAL DE INNOVACIÓN Y TENDENCIAS EN INGENIERÍA – CONIITI - Bogotá 10/2015.
- **Article:** GridColombia: National Grid Initiative model supported by RENATA – Latin American Conference on High Performance Computing (CLCAR 2012) – 10/12
- **Article:** GridColombia: Accomplishments and Challenges of a NGI in Latin America – Proceedings of the Joint GISELA-CHAIN Conference - Mexico, 27- 29 June 2012 - ISBN 978-88-95892-05-4.
- **Book:** Connection of a computational node to GridColombia Infrastructure - Conexión de Nodo Computacional a GridColombia – ISBN 978-958-716-503-6.