Hugo Alfredo Cano Bravo

Principal Architect in Cloud technologies.
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Personal Portfolio: **www.hcanobra.net**

SUMMARY

Countries: Mexico, Australia, United States.

A seasoned, principal Engineer with extensive leadership experience, demonstrating expertise across diverse global technology markets in the telecommunications industry. Proven track record in both technical execution and leadership. Excelled in roles ranging from Senior Network Engineer, Principal Full Stack Engineer, Solutions Architect, and Sr. Manager. Career marked by significant achievements in network operations, design, and strategic planning, alongside substantial experience leading high-performance engineering teams.

CORE SKILS

Customer Service & Support | Proof of Concept Development | Strategic Network Planning & Optimization
Budget Forecasting & Resource Allocation | Team Leadership & Development | Technical Project Management
Cross-Functional Project Collaboration | Leadership Reporting | Highly Scalable Systems Design | Multi-Vendor System Administration & Supplier Management | Technical Documentation & Reference Architecture

EXPERIENCE

Principal Engineer Cloud Technologies
Verizon Wireless 2022 – 2024 | Area Planning

Oversaw design, implementation, and evaluation of proof-of-concept solutions across diverse industries, evaluating new technologies, including **V2X** (Vehicle-to-Everything), **CloudXR**, on**line gaming**, **AR/VR** applications in Verizon's network, and **Amazon Wavelength**.

- Led the design, implementation, and evaluation of proof-of-concept solutions for low-latency applications in Verizon's network, incorporating cutting-edge technologies such as **V2X** (Vehicle-to-Everything), **CloudXR**, and **VR/AR** content over AWS services.
- Architected cloud-based test environments leveraging AWS **EC2**, **S3**, **Route 53**, **CloudFront**, and **Aurora RDB**, ensuring scalability and robustness for evaluating application performance, system **KPIs**, and network optimization strategies.
- Developed strategic cloud migration frameworks focused on **MEC**, **Outposts**, **Snowflake**, **Wavelength**, and **Direct Connect**, optimizing hybrid cloud infrastructure for seamless 5G and content delivery integration.
- Applied big data analytics and predictive **AI/ML** frameworks using **Python**, **Grafana**, **Tableeau** and **Prometheus** to forecast network performance, enhance automation, and drive intelligent decision-making.
- Delivered **customer-centric** solutions by engaging with senior technical leaders with partners such as **Amazon**, **Apple**, **NVIDIA**, **Meta**, and **Verizon**, translating complex cloud architectures into business-aligned outcomes.
- Owned the end-to-end strategy for media applications, such as AR/VR content and HiFi audio collaboration applications for performance tuning, and telecom cloud modernization, such as **network slicing** and **L4S**, ensuring seamless high-performing workloads.
- Advocated for cloud-first strategies through whitepapers such as **Opensesame media**, driving architectural discussions and empowering organizations to accelerate their AWS adoption.

Principal Engineer System Performance
Verizon Wireless 2020 – 2022 | Utah, Idaho and Montana Markets

Led a high-performance team of engineers, overseeing the comprehensive network performance in Verizon across the Utah and Idaho markets. Managed outdoor and indoor infrastructure, driving **strategic planning** and enhancing user experience.

- Demonstrated excellence in **budget forecasting** for capacity planning. Developed an **advanced predictive model** using AI and ML to identify and prioritize capital investment in growth areas.
- Played a pivotal role in successfully launching Verizon's **5G non-stand-alone(NSA)** and **stand-alone (SA).**
- Led significant network coverage improvements, thought, and capacity initiatives at Verizon with the use of AI and ML models.

Principal Engineer Network Operations Assurance
Verizon Wireless 2015 – 2020 | Colorado, Utah, Idaho

Led a high-caliber team of engineers responsible for overseeing the wireless infrastructure across the Mountain submarket, encompassing net
work core infrastructure in Denver, CO, Salt Lake City, UT, and access locations in Boise ID.

- Focused on **network operations**, administration, and maintenance. Managed 24x7 support for the team, ensuring effective management of network performance and system integrity during critical maintenance windows and strategic activities in the network, and directed critical projects related to **network migration**, infrastructure **upgrades**, and preparation for advanced technologies, including **5G Core**, and Multiaccess edge computing (**MEC**) in partnership with **Amazon Web Services (AWS)**.
- Spearheaded deployment of **Verizon's Cloud Platform** (VCP), overseeing the installation of **RedHat OpenStack** hardware and software to support our **VNF** infrastructure. Additionally, facilitated network core migrations in preparation for **5G slicing** (eNSE), and actively participated in implementation, and troubleshooting sessions to ensure a smooth transition.
- Led the development of **automated processes** for call testing and configuration auditing, utilizing tools like Spectral Tool and **Python scripting** to prevent configuration discrepancies and enhance customer impact during maintenance window activities, and used relational and non-relational databases including **SQL, PostgreSQL**, and **MongoDB** for effective data management and analysis.
- Developed expertise in **4G/5G call flow analysis**, leveraging tools such as **NetScout, IrisView**, and **Wireshark** for protocol and packet analysis.

ADDITIONAL EXPERIENCE

Verizon Wireless | Sr. Network Data Engineer
Verizon Wireless | Network Technician
Bank of America | Design Team Lead
Migesa | Sr. Network Engineer
Applicon Australia Pty Ltd | Network Engineer
TV Azteca | Sr. Network Engineer

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EDUCATION

Master of Science (MS), Data Analytics
Western Governors University
Bachelor of Science (BS), Information Technology
Instituto Politécnico Nacional
Applied Data Science Program
MIT professional education

CERTIFICATIONS

AWS Cloud Practitioner (in progress)
Cisco Certified Internetwork Expert Writing (CCIE)
Cisco Certified Network Professional (CCNP)
Cisco Certified Design Associate (CCDA)
Cisco Certified Network Associate (CCNA)
Junos, Associate (JNCIA-Junos)
Red Hat Certified Engineer in Red Hat OpenStack
Project Manager Professional (PMP)

TECHNICAL Experience

Data Analytics, Data Science:

- Data acquisition: MySQL, PostgreSQL, MongoDB, neo4J, **AWS Aurora**, ETL..
- Data cleaning: Python, R, Database Query.
- Data exploration: Exploratory Data Analysis (EDA), descriptive statistics.
- Predictive modeling: Linear regression, logistic regression, Predictive analysis, regression analysis.
- Data mining: Supervise and unsupervised learning, classification analysis, and sentiment analysis.
- Reporting and visualization: Grafana, Tableau.
- GenAI LLM (OpenAI, DeepSeek)
- AI frameworks (TensorFlow, Scikit-learn, PyTorch.

Cloud and DevOps:

- Advanced scripting/coding in Python.
- Network automation for AWS deployment using Python and **Terraform**.
- Experience deploying Infrastructure as a service (**IaaS)** with AWS and Azure, RedHat OpenStack, and **Docker**.
- Experience deploying databases with PostgreSQL, **AWS Aurora**, Neo4J, GCP, **Prometheus**, and MongoDB.
- Experience with **Grafana**, **Tableau**, and Atlassian Confluence for data presentation.
- Experience managing **GitLab** repositories.
- Full Stack Development (Front-End & Back-End).
- **AWS EC2, S3, Route 53, CloudFront, DynamoDB**

3gpp:

- 5G Non-Stand-Alone (NSA) and Stand-Alone (SA) Frameworks and technology deployment.
- Experience with Atoll Radio Frequency Planning and Optimization Software.
- Experience with GIS models using Python as the back-end engine for data processing.
- Experimental evaluation of 3gpp standards such as Low Latency, Low Loss, Scalable Throughput (L4S), and Network Slicing over 5GSA.

Networking:

- Routing and Switching technologies (VTP, STP, Multicast routing, HSRP, VRRP, BGP, OSPF, ISIS, MPLS,VXLAN).
- Netowrk planning, designing, implementing, operating, troubleshooting, and maintaining routing and switching infrastructure using Cisco and Juniper equipment.
- Experience with Network Performance Tools and protocol analysis (NetFlow, SNMP, tshark, tcpdump, WireShark, NetScout, IrisView)
- Network Performance analysis, evaluation, optimization, and troubleshooting.

ACHIEVEMENTS

- I led multiple proof-of-concept (PoC) projects, with business partners such as NVIDIA, Meta, AWS, Apple, Holo-Light, and others, demonstrating the viability of emerging technologies over Verizon 5G infrastructure, by creating a test environment for application evaluation, resulting in improved functionality and competitive advantage.
- I developed and launched a full-stack test ecosystem applications infrastructure that streamlined internal processes for PoC staging, and evaluation, improving productivity and reducing overhead costs.
- I engineered predictive data models using AI and ML that targeted improved automation testing efficiency, leading to faster deployment cycles, and reduced operational costs.
- I successfully submitted three patent applications focused on using AI and ML to predict network performance, assess application requirements, and optimize budget investments in Verizon's build plan.
- I developed a comprehensive data analysis strategy that led to a 25% reduction in network latency and a 20% increase in system throughput, directly contributing to enhanced service quality. Such results were observed during RootMetrics 2022 – 2024 benchmark results.
- I successfully led a major network optimization project resulting in a 30% improvement in system performance and reliability.
- I oversaw capital and expense budgets, significantly reducing overtime hours and optimizing cost-efficiency while managing the return and repair process.
- I ensured adherence to Maintenance Engineering directives, achieving timely resolution of NOC and NRB tickets within 48 hours and maintaining high standards in preventive maintenance.
- I implemented a comprehensive training program for network engineers, significantly enhancing team skills and operational efficiency.
- I effectively coordinated the deployment and troubleshooting of high-profile network migration projects, enhancing data throughput and network reliability.
- I was a key component in the network planning, design, and implementation for Verizon 4G LTE and 5G NSA networks in the Mountain market.
- I successfully designed and deployed scalable systems that supported Verizon's capacity growth in network traffic demand while maintaining high performance and reliability.
- I developed and maintained documentation, supporting effective system management and facilitating clear communication across technical teams.
- I successfully managed and maintained complex switching and data communications equipment, contributing to improved network stability and performance.