SERGIO LAVAO OSORIO

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PROFILE

Electrical Engineer with interests on Wireless Networks, Cloud Computing and Signal Processing.

EDUCATION

Bachelor of Science in Electronics Engineering, Pontificia Universidad Javeriana — Sept 2023
GPA: 4.3/5.0
Acknowledgments: Thesis Honorable Mention
Relevant Courses: Signal Processing (4.5/5.0), Communication Systems (4.5/5.0), Artificial Intelligence(4.5/5.0)

EXPERIENCE

Cloud Solutions Architect — Sept 2023 - Present
GNS, AWS Partner — *Bogotá, Colombia*

RENEW Wireless Research Intern — Jun 2023 - Sept 2023
Rice University — *Houston TX, USA*

Teaching Assistant, Communication Systems — Jan 2023 - Jul 2023
Pontificia Universidad Javeriana — *Bogotá, Colombia*

PROJECTS

Agora Wireless: Channel Simulator Improvements
Implementation of Frequency domain channel, frequency selective fading and massive Matlab QuaDRiGa generated datasets at Channel Simulator.
Results and video demo
knowledge: C++, Python, Matlab, Wireless Networks, Signal Processing

Thesis: Cooperative Successive Interference Cancelation in Downlink Cellular Networks
Research of a NOMA Technique in a cooperative scheme using SIC to improve the sum rate of Downlink communications in multi-cell cellular network.
Paper and results
knowledge: Matlab, Python, Wireless Networks, Stochastic Processes and Information Theory

Wireless Network Tool Open-source tool designed for a research project on the field of Wireless Networks, used for automation of analytical deterministic results and comparisons of sum rates between multiples techniques.
Paper and results
knowledge: Matlab, Python, Wireless Networks and Information Theory

DevSecOps Implementation Integration of CI/CD with security testing at every stage of the software development using Jenkins, SonarQube, Docker and AWS ECR including the deployment of Security orchestration, automation, and response (SOAR) using Shuffle in a production environment using AWS ECS.
About - Platform
knowledge: Cloud Architecture, CDK, Terraform

PLUMABot Open-Source 2DoF planar low cost (10 USD) robot controlled using Python based on given Blender coordinate points. Automation of Path Planning and implementation of Inverse and Forward Dynamics and Kinematics using Matlab
Paper and results
knowledge: C, Bash, Matlab, Python, Blender, Altium and Control Theory

PERSONAL PROJECTS

TPS Multiplayer (2024) Multiplayer Personal project made based on Communication Systems with OpenSource software such as Godot4 and Blender using TCP/UDP and Cloud Based Technologies.
Information and Development Log
knowledge: Game Engines, C, C++, Cloud Architecture, Communication Systems

Slippin' Dog (2023) Personal video game project made based on Robotics and Control Systems made with Open-source software such as Godot4 and Blender, currently on development.
Information and Development Log
knowledge: CSharp, C++, C, Godot4, Blender and Control Theory

CERTIFICATIONS

AWS Certified Solutions Architect SAA-C03 **Jan 2024**
AWS Cloud Practitioner Foundational CLF-C02 **Jun 2023**
CS50's Web Programming with Python and JavaScript **Jan 2022**

SKILLS

Cloud: AWS Organizations, EventBridge, REST API Gateway, CodePipeline, CloudWatch, ElastiCache, RDS, DynamoDB, ALB, NLB, ECS, EKS, EC2, S3, Lambda, SQS, ETL Glue, Athena.

Tools: AWS CLI, Docker, Kubernetes, Elasticsearch, PostgreSQL, SQL, Jenkins, Bash, Linux, Git, GitLab, Bitbucket, Postman, Wireshark, VisualStudio, Jira.

Programming Languages: Python, Matlab, Javascript - TypeScript, Bash, C++, C#

Databases: Redis Stack, PostgreSQL, MongoDB

IaC: Terraform, AWS CDK

LANGUAGES

English - C1 (CEPT)
Spanish - Native