Felipe Russi

af.ariasr@uniandes.edu.co | (+57) 30594139887 | Github | LinkedIn | Portfolio

EDUCATION

Universidad de los Andes, *Bogota, Colombia*
BSc in Systems and Computing Engineering *Aug 2019 - December 2024*
Relevant Coursework: *Machine Learning, Generative Models, Natural Language Processing, Quantum Computing, Data Structures, Design and Analysis of Algorithms, Business Intelligence, Computing Infrastructure, Database Systems.*

Universidad de los Andes, *Bogota, Colombia*
Bachelor of Mathematics *Aug 2020 - December 2024*
Relevant Coursework: *Statistics, Probability, Differential Geometry, Topology, Logic, Information Theory, Numerical Analysis, Abstract Algebra, Measure and Integration Theory, Pattern Recognition.*

GRANTS AND AWARDS

August 2019. *Generación E Scholarship, Universidad de los Andes and Ministry of National Education (Colombia).*
January 2024. *DevSavant-IntelePeer Excellence Scholarship, DevSavant and IntelePeer.*
June 2024. *Summer Undergraduate Research Fellowship (SURF), Universidad de los Andes and Cornell Tech.*
August 2024. *Vamos Pa'lante Scholarship, Universidad de los Andes.*

RESEARCH PAPERS

Bridging the Gap in Health Literacy: Harnessing the Power of Large Language Models to Generate Plain Language Summaries from Biomedical Texts
   Authors: Carolina Salazar-Lara, Andrés Felipe Arias-Russi, Rubén Manrique, 2025
   Submitted to CL4Health @ NAACL 2025. Accepted on March 3rd.

RESEARCH EXPERIENCE

Kelsenia | *AI Researcher* *March 2025 – Present, Bogota, Colombia*
- Developed a benchmark for legal reasoning to evaluate the capabilities of AI tools.
- Researched techniques in prompt engineering, automatic data creation, and AI-assisted benchmark generation using LLMs.
- Utilized RAGs for information extraction and investigated Graph RAGs with Knowledge Graphs for legal documents.
- Collected and processed data from various legal sources utilizing web scraping techniques.
- Created AI workflows using n8n and Langflow to generate legal data for benchmarks.

FLAGLab at Universidad de los Andes | *Research Assistant* *Aug 2022 – Present, Bogota, Colombia*
- Developed a custom metric to measure text plainness and built **ML models** to classify text as plain or professional.
- Collaborated with professionals in **medical writing** from **MSD** to define key challenges in **health literacy**.
- Implemented **readability analysis** using **NLP libraries**, enhancing user experiences through accessible text.
- Developed and **fine-tuned NLP models** for semantic classification, enhancing plain-language **generation pipelines.**
- Managed **large biomedical datasets** with tools like Pandas and NumPy, and collected data using web scraping.
- Conducted **statistical analysis** to optimize **LLM text generation** and ensure adaptability across diverse domains.

AIRLab at Cornell University | *Research Assistant* *Jun 2024 – March 2025, New York City, USA*
- Led a project to develop a web interface to support healthcare workers through adaptable robot systems.
- Developed a web interface using **Svelte** and **FastAPI** for controlling a **TIAGo base robot**, integrating cross-functional tools.
- Evolved the interface from **medical assistance** to **general-purpose control**.
- Reduced **latency by 80%** through optimized WebRTC communication and **ROS bridge** integration.
- Enhanced **vision tracking** with **YOLO** and optimized **dialogue interactions** and system prompts using **LLMs.**
- Conducted **pilot studies** and analyzed workflows to improve usability and functionality.

Universidad de los Andes | *Mathematics Research Assistant* *Jan 2024 – Jan 2025, Bogota, Colombia*
- Contributed to a **seminar on Optimal Transport** and expanded this research area within the university.
- Studied **Mean-Field Variational Inference** and **Optimization** to understand its applications in probabilistic models.
- Explored Optimal Transport to improve the accuracy and convergence of **variational methods.**
- Applied known inference and transport methods to **generative models** and **clustering**.

Cornell Tech | *Research Intern* *Jun 2024 – Aug 2024, New York City, USA*
- Developed a web interface using **Svelte** and **FastAPI** for controlling a **TIAGo base robot**.
- Evolved the interface from **medical assistance** to **general-purpose control**.
- Implemented **scalable architectures** ensuring **low-latency interactions** with WebRTC and rosbridge.

ML4I at Universidad de los Andes | *Machine Learning Specialist* *Jan 2024 – Jun 2024, Bogota, Colombia*
- Conducted research on simulating data for financial sector risk analysis for a **Colombian stock exchange company**.
- Developed machine learning models to predict and mitigate financial risks based on simulated data.
- Collaborated with a cross-functional team to integrate ML solutions into financial decision-making processes.

[Robocol at Universidad de los Andes](#) | *Computer Vision Engineer*   *Jan 2021 – Aug 2022, Bogota, Colombia*
- Developed and optimized object detection algorithms using **YOLO** and **CNNs** for robotics competitions.
- Collaborated with multidisciplinary team members to integrate **vision systems** into robots and improve performance.
- Conducted field tests in desert environments to evaluate and optimize vision-based tasks for the rover.
- Reached final stages in the **URC 2022**.

WORK AND TEACHING EXPERIENCE

Universidad de los Andes | *Secondary Instructor*   *Jan 2024 – Jun 2024, Bogota, Colombia*
- Taught one semester of **Differential Calculus** to +30 students, with 2 classes per week.
- Led workshops and quizzes and provided office hours to reinforce understanding and evaluate progress.
- Created course materials, problem sets, and assessments to enhance learning and comprehension.

Universidad de los Andes | *Math Tutor*   *Aug 2023 – Jun 2024, Bogota, Colombia*
- Assisted students with **math subjects** including Pre-Calculus, Differential and Integral Calculus, and Linear Algebra.
- Conducted **6 hours of weekly** tutoring sessions, providing personalized support to reinforce core concepts.
- Applied **active learning strategies** to engage students and improve their problem-solving skills.

Universidad de los Andes | *Teaching Assistant*   *Jan 2022 – Dec 2022, Bogota, Colombia*
- Supported +**50 students** in the **Algorithm Design and Analysis** course through grading and review sessions.
- Clarified **algorithmic concepts** and provided individualized support.
- Guided hands-on exercises in **algorithm design** and **complexity analysis**.
- Assisted with **data structure optimization** through coding tasks.
- Designed and delivered **interactive coding workshops** to enhance collaborative learning.

PROJECTS

CARIS: A Context-Adaptable Robot Interface System for Personalized and Scalable Human-Robot Interaction
- Designed a modular robot interface system that combines **navigation**, real-time **comprehension**, and multimodal data recording to improve adaptability across diverse environments.
- Focused on enhancing **user experience** by refining interaction flows, optimizing **LLM-based prompts**, and incorporating intuitive **communication options.**
- *Planned for submission to RO-MAN 2025.*

Bridging the Gap in Health Literacy by NLP and LLMs
- Conducted research to improve health literacy by using **LLMs** to generate simplified biomedical text summaries.
- Built and tested **linguistic analysis methods** to evaluate the generated text for simplicity and semantic fidelity.
- Developed an API to support plain language analysis and facilitate medical text translation with LLMs.

Generative Models for Quasar Spectra
- Trained **Variational Autoencoders (VAEs)** and **GANs** using **TensorFlow** to generate **quasar spectra data**.
- Created synthetic quasar data with modified parameters to simulate astronomical scenarios.
- Collected an extensive quasar spectra dataset.

DevSavant Contest
- Collaborated on a team to develop a Visual Studio Code extension for project analysis using **LangChain** and **LLMs**.
- Extracted key project information and used LLMs to answer questions about **code functionality** and **modifications**.
- Enabled efficient **code analysis,** helping developers understand and improve code quality.

Mobile Application for Restaurant Discovery
- Collaborated with a team of six to develop a **dual-platform mobile app** using **Kotlin** for Android and **Flutter.**
- Designed the app to help users discover and publish restaurants near the university.
- Focused on **software architecture**, **optimization**, and **multithreading** to ensure seamless functionality.

SKILLS SUMMARY

Soft Skills: Collaborative problem solver, effective communicator, experienced in education, open-minded, adaptable to new challenges, resourceful, excels in teamwork, and maintains a positive attitude.
Programming Languages: Python, Java, R, Dart, JavaScript, SQL, HTML\CSS.
Tools/Frameworks: FastAPI, Tensorflow, Keras, Pytorch, spaCy, scikit-learn, Flutter, Docker, PostgreSQL, ROS.
Expertise: Data {Modeling, Analytics, Visualization}, ML Pipelines, NLP, Deep Learning, LLMs, Optimization, Software Architecture, HCI, HRI.

CERTIFICATIONS

NVIDIA – [Building Transformer-Based Natural Language Processing Applications](#) – *May 2024*
Coursera – [DeepLearning.AI TensorFlow Developer](#) – *Jun 2021*
Coursera – [Deep Learning Specialization](#) – *May 2021*
Coursera – [Machine Learning (Stanford University)](#) – *Jul 2020*