

Maria Fernanda Roa Loaiza



About me

Machine Learning engineer with three years of experience in software engineering, deep learning, computer vision, and data science. Creative engineer who developed an end-to-end solution to support lung cancer diagnosis using multimodal data. Research experience in Computer Vision, NLP, 3D data tasks, and GNNs. Eager to tackle new engineering challenges to design and implement high-quality algorithmic solutions working individually or with a team.

Skills

- Programming languages: Python, Matlab, Java
- ML and DL libraries: PyTorch, Sci-kit learn, TensorFlow, SpaCy, NLTK
- Databases: PostgreSQL, Apache Cassandra
- AWS tools: EC2, S3, Lambda
- Misc.: Airflow, Git, Spark, Bash, Docker
- Data VIZ: Matplotlib, Dash, Seaborn, plotly

Work Experience

- 01/21–Now **Center for Research and Formation in Artificial Intelligence** Universidad de los Andes
Research Professional
 Multidisciplinary work for the development of research projects. Writing and publication of scientific articles in international conferences. Application of computational skills to solve biomedical engineering problems.
- 06/19–Now **Computer vision research group** Universidad de los Andes
Member
 Support research in biomedical segmentation and participate in group seminary. Lead a research team focused on Lung Cancer Computer-Aided diagnosis implementing Deep Learning tools.
- 01/20–12/20 **Biomedical Engineering Department** Universidad de los Andes
Graduate Teaching Assistant
 Part-time job at the university taught to undergraduate students of the Biomedical Engineering department in the subject of Image Analysis and Processing.

Contact

Address

Cr 51A #127 - 75
 TO 1 AP 1001
 Bogotá
 Colombia

e-mail

mf.roa@uniandes.edu.co

LinkedIn

linkedin.com/in/maferoaloaiza

skype

mafe_roal@hotmail.com

Languages

Spanish – Native
 English – C1
 French – A2
 German – A1

Soft Skills

Leadership, Ability to
 Work Under Pressure,
 Creativity, Adaptability,
 Teamwork, Engineering
 Problem solving.

Publications

- 07/21 **SAMA: Spatially-Aware Multimodal Network with Attention for Early Lung Cancer Diagnosis**
 Multimodal Learning and Fusion Across Scales for Clinical Decision Support MICCAI 2021 Workshop
M. Roa, L. Daza, M. Escobar, A. Castillo, and P. Arbeláez
https://link.springer.com/chapter/10.1007%2F978-3-030-89847-2_5
- 08/20 **Smart Pooling: AI-powered COVID-19 testing** medRxiv Preprint
 M. Escobar, G. Jeanneret, L. Bravo-Sánchez, A. Castillo, C. Gómez, D. Valderrama, **M. Roa**, J. Martínez, J. Madrid-Wolff, M. Cepeda, M. Guevara-Suarez, O. L. Sarmiento, A. L. Medaglia, M. Forero-Shelton, M. Velasco, J. M. Pedraza-Leal, S. Restrepo, and P. Arbeláez. <https://doi.org/10.1101/2020.07.13.20152983>.

Education

- 01/20–06/21 **M.Sc.** Biomedical Engineering Universidad de los Andes
GPA 4.52 / 5.0 Excellence Scholarship
- 08/16–12/19 **B.Sc.** Major in Biomedical Engineering, Minor in Jazz practice Universidad de los Andes
Recipient of Quiero estudiar scholarship

Achievements

- 05/21–09/21 **DS4A - Colombian Cohort 5** Correlation one
Selected as one of the 620 over 9000 applicants for advanced education in data science, sponsored by the Colombian government.
- 01/20–12/20 **Excellence AGM scholarship of the Engineering Faculty** Universidad de los Andes
50 % scholarship for postgraduate studies.
- 08/16–12/19 **Quiero estudiar Scholarship** Universidad de los Andes
95% scholarship for undergraduate studies for obtaining a high score in the ICFES exam and attaining a semester GPA of at least 3.25.

Interests

Professional: • Machine Learning • Computer Vision • Deep Learning • Analytics • Data science.
Personal: • Singing • International Cooking • Romantic poetry • Jazz Improvisation.

References

Pablo Andrés Arbeláez
Associate Professor
Universidad de los Andes
pa.arbelaez@uniandes.edu.co

Mario Andrés Valderrama
Associate Professor
Universidad de los Andes
mvalderr@uniandes.edu.co