

Juan Sebastián Vinasco-Salinas



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Profile

Remote sensing / EO image processing engineer with hands-on experience across the optical satellite data chain: multi-sensor fusion (Sentinel-1, Sentinel-2, VEN μ S, SPOT), orthorectification, precise co-registration and SNR-based radiometric quality assessment. Built production processing pipelines (StackReg / Sen2VEN μ S) covering geometric alignment and radiometric correction, containerized with Docker/GitLab CI/CD on HPC. Completed the DLR/ESA PolinSAR training course. Python-first engineer used to cross-format EO data (GeoTIFF/COG, netCDF, HDF5), looking to bring this calibration and processing-chain background to LiveEO's Twinspector programme.

Relevant satellite image processing experience

- 10.2021 – 04.2022 **Remote Sensing Engineer – Sentinel-HR Space-Time Fusion (CNES-funded), Centre d'études spatiales de la biosphère (CESBIO), Toulouse, France, Research Engineer**
- Co-developed StackReg, a Python/Dask/xarray pipeline for feature extraction and space-time fusion of high-resolution Sentinel-2 and VEN μ S imagery; the resulting Sen2VEN μ S dataset (Zenodo) has 38+ citations.
 - Implemented image registration, SNR-based radiometric quality assessment and orthorectification algorithms – precision geometric alignment directly transferable to multi-sensor / stereo geo-referencing and L1A/L1B-style product generation.
- 04.2023 – 09.2024 **Payload Engineer – PARMA Project, TOSCA Program (CNES), Centre d'études spatiales de la biosphère (CESBIO), Toulouse, France, Research Engineer**
- Developed, trained and validated ML models (MLP, PyTorch) for physics-based inversion of the SOS radiative transfer model applied to Sentinel-2, VEN μ S and SPOT imagery – direct hands-on exposure to the radiometry underlying atmospheric/radiometric correction chains.
 - Containerized processing workflows with Docker and automated delivery via GitLab CI/CD on HPC (SLURM), a workflow directly analogous to production ground-processing chain design.
- 07.2022 – 03.2023 **AI Engineer – MAESTRIA Project (ANR-funded), Centre d'études spatiales de la biosphère (CESBIO), Toulouse, France, Research Engineer**
- Designed and trained multimodal deep learning models (VAE, GAN) in PyTorch for multi-sensor fusion of Sentinel-1 SAR and Sentinel-2 optical imagery, handling cross-sensor differences in geometry, resolution and radiometric statistics – comparable to inter-sensor / inter-satellite consistency work.
 - Built an end-to-end image processing pipeline (Python, Orfeo Toolbox) for orthorectification and precise co-registration of optical and SAR imagery, contributing to shared GitLab repositories with rigorous code review standards in a multi-partner research consortium.

Additional radar/calibration training

- 11.2023 – 02.2024 8th edition of the open PolinSAR training course by DLR/ESA
- 10.2023 – 11.2023 Journées Inter-réseaux Radar — scientific exchange on radar systems, IETR Rennes, France

Other relevant experience

- 08.2025 – Present **Geospatial Data Scientist**, *Tecna-ICE*, Cali – Bogotá, Colombia
- Built a computer vision pipeline (PyTorch) integrated with ArcGIS for automated feature extraction and detection of oil storage tanks in satellite imagery at scale.
 - Designed and deployed a Python-based ETL pipeline for large-scale ingestion of 2D/3D geospatial datasets across multiple data sources and formats (incl. GeoTIFF/COG).
- 05.2025 – 12.2025 **Research Engineer: Remote Sensing & AI**, *Instituto Geográfico Agustín Codazzi (IGAC)*, Cali – Bogotá, Colombia
- Deployed an end-to-end ML pipeline for land use / land cover classification and change detection across Colombia using Sentinel-2 imagery.
 - Optimized distributed data processing workflows on HPC environments, scaling ML inference across large-scale geospatial datasets.
- 10.2020 – 04.2021 **Research Internship (M2) – Densification of Sentinel-2 Time Series**, *Centre d'études spatiales de la biosphère (CESBIO)*, Toulouse, France
- Benchmarked deep learning super-resolution and image reconstruction models (PyTorch) for satellite time-series analysis on HPC.

Education

- 02.2014 – 10.2022 **Dipl.-Ing. Topographic Engineering**, *Universidad del Valle*, Cali, Colombia
- Specialization in Remote Sensing and Artificial Intelligence (SAR, Pattern Recognition, Neural Networks).
- Thesis: *Monitoring droughts in the department of La Guajira, Colombia* — (4.5/5.0)
- Zeugnisbewertung** for foreign higher education qualifications issued in Germany; **university listed as H+ in anabin**

Additional qualifications

- 2024 Sen2Vecs dataset published on Zenodo (38 citations) — co-author

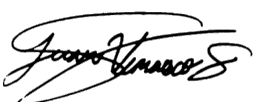
Skills & Interests

Languages

- Spanish Native (C2)
- English Fluent (B2) — TOEFL certified
- French Advanced (B1)
- German Currently studying (A2) — relocating to Germany, autumn 2026

Technical skills

- EO image processing Radiometric & geometric calibration fundamentals (PolinSAR) · orthorectification & multi-sensor co-registration · SNR-based radiometric quality assessment · SAR–optical multi-sensor fusion · generative fusion models (VAE, GAN)
- Geospatial / CV Sentinel-1/2 imagery analysis · image registration · Orfeo Toolbox (OTB) · QGIS · ArcGIS · segmentation & change detection
- ML / Deep Learning PyTorch · VAE, GAN, MLP, CNN · model training, evaluation & deployment
- Python NumPy, xarray, Dask, GeoPandas, Rasterio, GDAL · data analysis, processing-chain workflows & automation · Git, GitHub/GitLab CI/CD
- Data formats GeoTIFF/COG, netCDF, HDF5, SAFE · ONNX (model export)
- Infrastructure Docker · HPC/SLURM · Linux · shell scripting · GitLab CI/CD



Cali, Colombia, 06.07.2026, Juan-Sebastian Vinasco-Salinas