

Andres Lanzos

Biomedical Data Scientist | Translational Omics | Biomarker Discovery | ML Products

Basel, Switzerland | Spanish citizen

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Summary

PhD biomedical data scientist with 5+ years of industry experience in Swiss biotech, pharma and healthtech, and 10+ years across industry and academia. Takes data science projects from discovery to operational product across science, product design, IT/cloud infrastructure, regulatory strategy, negotiations, customer acquisition and user testing. Expertise in target and biomarker discovery, translational multi-omics, clinical data and real-world data; built an ML pipeline with 4x sensitivity at matched specificity and led CHF 1M+ programmes and a CHF 700k-funded venture.

Technical Skills

Biomedical science: Target and biomarker discovery; translational science; oncology; immunology; genomics; transcriptomics; proteomics; metabolomics; multi-omics; bulk and single-cell RNA-seq; clinical and real-world data.

Data science and statistics: Python; R; machine learning; survival analysis; differential expression and abundance analysis; batch-effect correction; experimental design; data visualization.

Data and workflow engineering: Structured Query Language (SQL); relational databases; AWS; Linux; Bash; Git/GitLab; Nextflow; nf-core; high-performance computing (HPC); Shiny application development.

Product and regulated delivery: Project management; Scrum; Kanban; GCP/GxP; product design; regulatory strategy; stakeholder management; negotiation; customer acquisition; user testing.

Work Experience

CSEM | Allschwil, Switzerland

Entrepreneur, Idunox Startup Project | 05/2024 - 07/2026

- Developed an ML pipeline from raw data to disease risks and explainable markers, achieving 4x sensitivity versus the best clinical tools at matched specificity.
- Raised CHF 700k in dilutive and non-dilutive funding for a preventive-health venture using blood-based multi-omics and AI.
- Led R&D strategy for a team of 5 and coordinated data and AI workflows, legal and ethics frameworks, governance, providers and supply chain.

Idorsia Pharmaceuticals | Allschwil, Switzerland

Data Scientist - Translational Biomarkers, Drug Discovery Biology | 09/2022 - 04/2024

- Discovered targets, biomarkers, mechanisms of action and indications in oncology and immunology using omics and real-world data.
- Analyzed bulk RNA-seq, single-cell RNA-seq and untargeted metabolomics data and built automated Nextflow and nf-core pipelines in GitLab and AWS.
- Served as lead scientist on a CHF 1M+ project, managing the data-supplier relationship and presenting results to director-level stakeholders.

Biognosys | Schlieren, Switzerland

Data Scientist | 05/2020 - 08/2022

- Developed data products and analytics services for R&D, business and operations teams.
- Built R algorithms and Shiny applications and performed differential-abundance, normalization and batch-effect analyses on proteomics data.
- Designed SQL databases for clinical data under GCP/GxP constraints and led a CHF 1M+ cross-functional project spanning scientific strategy, IT, legal, regulatory, operations, wet lab and C-level stakeholders.

Work Experience (continued)

Department for BioMedical Research (DBMR), University of Bern | Bern, Switzerland

PhD Student (Years 3-4) and Early Postdoc | 01/2018 - 04/2020

- Conducted cancer-genomics and non-coding RNA research using simulation and statistical testing frameworks; co-first-authored the first studies showing cancer-driving long non-coding RNA mutations and cataloguing cancer-associated lncRNAs.
- Developed ExInAtor, one of 13 methods selected by the PCAWG consortium, plus Bash, Python and R workflows in high-performance computing environments.

Centre for Genomic Regulation (CRG) | Barcelona, Spain

Master Student and PhD Student (Years 1-2) | 10/2014 - 12/2017

- Analyzed cancer genomics, transcriptomics and the non-coding genome and published ExInAtor, the first method designed specifically to identify long non-coding RNA cancer drivers.
- Built reproducible Bash, Python and R analysis pipelines on high-performance computing systems.

Education

PhD in Biomedical Sciences, University of Bern | 2015 - 2019 | *Summa Cum Laude*

MSc in Bioinformatics for Health Sciences, Universitat Pompeu Fabra | 2013 - 2015 | *GPA 8.92/10.00*

BSc in Biology, University of Vigo | 2009 - 2013 | *GPA 8.43/10.00*

Selected Publications

Tumour mutations in long noncoding RNAs enhance cell fitness (2023)

Co-first author; first work showing that long non-coding RNA mutations can drive cancer. 25 citations.

<https://www.nature.com/articles/s41467-023-39160-7>

Cancer LncRNA Census reveals evidence for deep functional conservation of long noncoding RNAs in tumorigenesis (2020)

Co-first author; first census of long non-coding RNAs implicated in cancer. 217 citations.

<https://www.nature.com/articles/s42003-019-0741-7>

Analyses of non-coding somatic drivers in 2,658 cancer whole genomes (2020)

Developer of one of 13 methods selected by the PCAWG consortium. 762 citations.

<https://www.nature.com/articles/s41586-020-1965-x>

Discovery of Cancer Driver Long Noncoding RNAs across 1112 Tumour Genomes (2017)

First author; first bioinformatic method to identify long non-coding RNA cancer drivers. 138 citations.

<https://www.nature.com/articles/srep41544>

Relevant Training

- Clinical Investigators I: Basic GCP and clinical research training, CTU University of Bern (2023).
- Drug Development Product Management Specialization, UC San Diego (2023).
- Drug Discovery Simulation, Learning By Simulation (2022).

Leadership, Awards and Service

- Teaching: 100 hours across cancer genomics, bioinformatics, advanced genome bioinformatics and omics courses at the University of Bern and Universitat Pompeu Fabra (2016-2020).
- FPU PhD Scholarship, Ministry of Education, Government of Spain (2015-2019).
- WWF Switzerland volunteer (2022-Present); founding member of Idorsia's Green Initiative (2022-2023).

Languages

English: Fluent | Spanish: Native | Italian: Conversational