

Curriculum Vitae for Sebastian Franco Ulloa

Personal information

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Summary

Consultant at Expert Analytics AS. PhD in biotechnological sciences with a background in physics and chemistry. My areas of interest include data science (analysis and visualization), machine learning, drug discovery, nanomaterials, and the theory of evolution. My values are based on the scientific method, critical thinking, and teaching. I am an analytical and compassionate person prompt to hear different perspectives on the same problem, to consolidate them into the most informed and reasonable judgement possible.

Technical skills

Applications	Supervised machine learning, Molecular dynamics, Mathematical modeling, Data visualization, Finite element methods, Design of experiments, Scientific writing
Languages	Python, C, SQL, bash
Packages	Scikit-learn, TensorFlow, Pandas, Matplotlib, Bokeh, Tkinter, Seaborn, Numpy
Tools	Ipypthon, GitHub, Linux, VMD, Gromacs, Microsoft Office Suite

Education

2017 – 2021	PhD Biotechnological sciences. <i>Italian Institute of Technology. Genoa, Italy.</i> Published six articles (plus three submitted and two in preparation) in peer-reviewed journals on innovative research Thesis title: "Multiscale Modeling of Metal Nanoparticles for Biotechnological Applications" Developed skills at proposing research questions, designing experiments, programming, and data analysis
2017 – 2020	Data science certificates of accomplishment. <i>DataCamp, Inc. Online.</i> A 245-hour course covering supervised and unsupervised learning with scikit-learn Python's toolkit and SQL database querying Developed skills in data processing, data visualization, linear/logistic models, SVM, CART, XGBoost, NLP, and deep learning

- 2020 **Leading Digital Transformation online course (6 weeks).** *Massachusetts Institute of Technology - Professional Education.* A 6-week online course on the implementation of artificial intelligence, blockchain, cloud computing, the internet of things, and cybersecurity in organizations and companies
- 2012 – 2017 **BSc. Physics.** *University of Los Andes. Bogota, Colombia.* Thesis title: Simulations of a Weakly Self-Interacting Fluid Using Lattice Boltzmann Methods. Graded 5.00/5.00
- 2011 – 2016 **BSc. Chemistry.** *University of Los Andes. Bogota, Colombia.* Thesis title: "Application of Molecular Mechanics for the Discovery of Novel Microbial IIA Topoisomerases Inhibitors. Graded 5.00/5.00
- 2016 – 2019 **Modern Physics at All Scales summer school.** *University of Leiden. Leiden, The Netherlands.* Summer program aimed at bachelor students to learn about multiple research branches and applied physics by leading experts

Professional experience

- 2021 – Present **Consultant.** *Expert Analytics. Oslo, Norway.* Implement mathematical models and data science solutions to innovate and optimize industrial processes
- 2018 – 2021 **Research collaborator.** *Italian Institute of Technology. Genoa, Italy.* Employed atomistic and coarse-grained molecular simulations to study functionalized nanoparticles interacting with biomacromolecules Targeted human and bacterial DNA topoisomerases for the development of novel anticancer and antimicrobial compounds Applied statistical methods to analyze hundreds of gigabytes of data
- 2019 **Guest researcher (6 months).** *Hylleraas Centre for Quantum Molecular Sciences. Oslo, Norway.* Collaborated with the research group of Prof. Michele Cascella in the study of charged colloids aggregation Developed skills in data processing and analysis with Python
- 2016 **Part-time professor (6 months).** *University of Los Andes. Bogota, Colombia.* Successfully devised and delivered training in analytical chemistry and laboratory practices for a diverse group of undergraduates. Feedback from the students gave me a teaching grade of 3.72/4.00 Graded over 50 assignments per week including lab reports, workshops, quizzes, and exams
- 2015 – 2017 **Teaching assistant.** *University of Los Andes. Bogota, Colombia.* Instructed weekly 2-hour lectures to 10-50 students on general, theoretical, computational, and physical chemistry topics Created a safe learning environment for students while promoting an ethical classroom code-of-conduct
- 2016 **Accompaniment program tutor.** *University of Los Andes. Bogota, Colombia.* Tutored five freshmen students in science-related subjects (chemistry, physics, mathematics, and biology) monitoring their progress, issues, and concerns related to university life

Languages

English	Highly proficient in speaking and writing
Italian	Proficient in speaking and intermediate writing skills
Spanish	Native

Personal skills

Data visualization	Intrinsically motivated to creating visually appealing representations of data
Problem solving	Interested in merging seemingly disconnected concepts into innovative and creative perspectives
Statistics	Solid background in statistics resulting from a training in scientific research
Teaching	Passionate about sharing knowledge both in formal and informal settings

Some interests and hobbies

Leisure	Music, knitting, pet-sitting
Miscellaneous	Generative art, the Theory of Evolution, jewel crafting
Physical activity	Boxing, dancing, acrobatics, yoga, hiking