Contact

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www.linkedin.com/in/fsantibanez (LinkedIn)
alges.cl/ (Company)
bni.cl/ (Company)
scian.cl/ (Company)

Top Skills

Project Delivery

Analytics

Subject Matter Experts

Languages

English (Professional Working)

Spanish (Native or Bilingual)

Certifications

Curso: Modelos de Peligro Sísmico en Minería usando Machine Learning

Generative AI on AWS: Deploying & Managing GenAI Services on AWS

ChatGPT Prompt Engineering Examples & Use Cases

Generative AI for Project Managers

People Leadership Credential – Chapter 2: Develop

Honors-Awards

Ph.D. Scholarship

Postgraduate Diploma

Startup funding

Enrique Molina Garmendia Scholarship

2nd prize. Feria Tecnológica.

Publications

Channelized Facies Recovery based on Weighted Compressed Sensing

Ore-waste discrimination with adaptive sampling strategy

Analysis of seismic tomography and geological data to identifying

Felipe Andrés Santibáñez-Leal

I&F Decision Science Assoc. Manager | Technical & Project Leader | Advanced Analytics & Digital Transformation
Santiago, Santiago Metropolitan Region, Chile

Summary

Advanced Analytics & Project Management leader with a proven track record of integrating data-driven solutions into mission-critical operations. Skilled at aligning business goals with technical innovation, leading cross-functional teams, and delivering measurable improvements across the value chain.

Experienced in the design and deployment of predictive models, optimization systems, and digital platforms that consistently drive operational KPIs, enhance decision-making, and embed a culture of continuous improvement. Recognized for fostering operational excellence, bridging technical and business domains, and achieving sustainable impact across mining, industrial, and service sectors.

My work has consistently delivered tangible KPI improvements:

Mining operations: fleet optimization reduced unplanned stoppages; concentrator initiatives increased SAG milling throughput and flotation recovery.
Manufacturing: advanced analytics projects improved production by 10–15%.
Environmental management: critical alert events were reduced through proactive monitoring and mitigation strategies.
Engineering systems: workflows for GPR, hyperspectral, and magnetometry data collection were accelerated from days to hours, strengthening decision-making speed and reliability.

Experience

Accenture
7 months

I&F Decision Science Assoc Manager
September 2025 - Present (7 months)
Santiago, Santiago Metropolitan Region, Chile

* Guide the strategic and ethical application of the insights derived from data.
* Architect and deliver solutions using Data & AI strategies, open-source modules or industry/function specific technologies, platforms, or software.
* Support sales of industry/function focused Data & AI projects.
* Develop models and algorithms using deep decision science and industry/function orientation to solve business problems.

Senior Data Science Lead | Technical & Project Lead @ MinCo-Hidro CODELCO
September 2025 - Present (7 months)
Santiago, Santiago Metropolitan Region, Chile

On client assignment at Codelco's Advanced Analytics Directorate (MinCo-Hidro) under the Technology & Digitalization Management (GTD).

I lead end-to-end data science initiatives for mining process optimization—delivering secure, scalable, production-grade solutions that tie business value to governance and engineering best practices.

Business responsibilities

* Portfolio shaping & prioritization aligned to operations and strategy
* Stakeholder alignment & ROI: translate needs into roadmaps/OKRs and measurable outcomes
* Adoption & change: pilot → production → support with training, docs, and SLAs
* Governance & platform choices: conform to enterprise/DGGD standards; make-or-buy balancing performance, cost, and time-to-value

Technical responsibilities

* Architecture & solution design: modeling strategy, feature engineering, batch/streaming pipelines, APIs/microservices
* MLOps & production: CI/CD, model registry, monitoring/observability (drift, accuracy, latency), retraining, A/B testing, safe rollback
* Quality & standards: secure coding guidelines, code reviews, automated unit/integration/performance tests, versioning & documentation
* Platform & reuse: shared libraries/templates/components, feature store usage, performance and cost optimization

* Integration & handover: interoperability with OT/IT/BI systems; runbooks, on-call readiness, smooth transition to support

Minera Centinela
Data Processing Specialist | Senior Lead Data Scientist | Project Leader
January 2025 - September 2025 (9 months)
Antofagasta, Antofagasta Region, Chile

At Minera Centinela, I led the development and implementation of an advanced analytics system for SAG mill operations. The project delivered a recommender system that generated actionable operational strategies every four hours, providing guidance for throughput optimization and process stability.

I was responsible for coordinating data science, engineering, and operations teams, ensuring alignment with production goals while incorporating expert knowledge into the models. The solution included predictive modeling of ore properties, real-time material tracking across stockpiles, and scenario-based optimization, resulting in measurable uplift in throughput and recovery efficiency.

This role combined technical leadership with project management, requiring close collaboration with plant operators, metallurgists, and senior management to translate analytical insights into operational decisions.

Accenture
Business & Technology Delivery Associate Manager | Project Leader in Advanced Analytics
June 2024 - January 2025 (8 months)
Santiago, Santiago Metropolitan Region, Chile

- Led advanced analytics and machine learning projects for large national mining companies.
- Development of predictive and prescriptive models for flotation, grinding, and thickening optimization.
- Managed initiatives to improve underground ore transport and mineralogical property tracking.
- Managed geophysical risk analysis projects, integrating radar and geological datasets to strengthen safety and operational reliability.
- Coordinated cross-functional teams and stakeholders to align analytical solutions with business objectives.

Consulting Services | Freelance Projects | Open to Work
Independent Consultant | Advanced Analytics & Software Development
May 2024 - June 2024 (2 months)
Santiago Metropolitan Region, Chile

- Consulting and software development in industrial process optimization, image/signal processing, statistical analysis, mathematical modeling, data science, and computer vision.
- Formulated, developed, and implemented a clay classification system using hyperspectral imagery from aerial sampling and scanning, applied to mining site characterization.
- Designed and deployed a crusher lining characterization system using point cloud measurement analysis and modeling of representative longitudinal profiles, enabling liner change prediction and wear profile projection.

CODELCO – Corporación Nacional del Cobre de Chile
Project Leader | Senior Data Scientist
January 2022 - May 2024 (2 years 5 months)
Región Metropolitana de Santiago, Chile

- Led advanced analytics and machine learning initiatives, from requirements assessment to implementation and migration into production environments (Azure Databricks, Azure Data Factory, Power BI, Kedro).
- Delivered successful projects currently operating in large-scale mining, including:
• Recommendation system for flotation and milling processes.
• Ore grade and metallurgical property tracking from extraction to plant, enabling real-time decision-making and event prediction.
• Predictive models for environmental pollution (PM10) correlated with mining activity, supporting mitigation strategies.
- Managed external data science teams, ensuring alignment with business goals and timely project delivery.
- Drove technical improvements such as optimized Spark Delta Table catalog usage, LogAnalytics for monitoring and alarms, and migration of Python solutions to Kedro 0.18.
- Built rapid analysis prototypes and intermediate solutions in Streamlit for local operational teams.

Alaya
Head of Analytics and Development Teams | Project Leader
August 2021 - December 2021 (5 months)
Gran Santiago, Región Metropolitana de Santiago, Chile

- Directed cross-functional teams delivering consulting and software development projects in advanced analytics, computer vision, and digital transformation.
- Designed and implemented optimization and monitoring solutions for diverse industries, including mining, aquaculture, food processing, and manufacturing.
- Led the development of a computer vision–based monitoring system for salmon industry operations, enabling real-time fish quality and quantity tracking to improve production planning and minimize losses.
- Developed optimization models and stochastic simulations for industrial processes, supporting decision-making under uncertainty.
- Managed client engagement, project scoping, and delivery of end-to-end solutions, from prototype to production.

Freelancer Software & Web Developer
Advanced Analytics and Data Science Consultant - Software Development and Support
January 2016 - November 2021 (5 years 11 months)
Santiago de Chile

Consulting services in formulation and implementation of industrial projects involving big data, analytics, high dimensional information and data science

Success stories in projects in the mining, dairy, financial services, food, textile and aquaculture industries

Implementation of Machine learning, Deep learning, and Optimization solutions based on Python, Kedro, and cloud services (both Azure and AWS)}

Electronic and Computer Support, Fieldwork and Remote Assistance. Software Implementation and Optimization

Advanced Laboratory of Geostatistics and Supercomputing
Principal Applied Scientific Researcher, Electrical Engineering Postdoctoral Research
August 2019 - October 2021 (2 years 3 months)
Santiago Province, Chile

Applied scientific research related with topics of machine learning classification and mathematical modelling of multidimensional data, hyper-spectral images, data fusion and super-resolution.

Working in characterization and classification of hyper-spectral data from mineralogical, microscopic and biomedical sources.

MicroMundo
Principal Hardware and Software Engineer
January 2017 - August 2021 (4 years 8 months)
Santiago Province, Chile

Develop new educational methodologies based on school scientific research.

Integrate low cost microscopy, image processing and virtual microscopy for the
generation of didactic educational content aimed at basic and middle school
students.

Make available to teachers and students the tools and knowledge in virtual
microscopy that allow them to generate advanced scientific research.

Advanced Laboratory of GeoStatistics and Supercomupting - ALGES
Expert ML/IA- Applied Scientific Researcher
August 2017 - July 2021 (4 years)
Santiago, Santiago Metropolitan, Chile

Integration of non-parametric bayesian strategies and high dimensional
hyperspectral data for the characterization of uncertainty and real time
estimation of geometallurgical variables from samples of mining processes

Universidad San Sebastian
Teacher
July 2017 - July 2021 (4 years 1 month)
Santiago Province, Chile

Development of activities related to Microscopy, Optics and Image Processing.
Exhibitions related to topics on physics, optics, image capture and applied
mathematical tools for digital processing of images applied in Medical
Informatics / Informatics Pathology.
- Development, implementation and execution of practicals aimed at providing
knowledge and support on the use of scientific software for image processing
and mathematical analysis
- FIJI and ImageJ

Centro de BioIngenieria Universidad Adolfo Ibañez
Configuration and Calibration of a Microscopy System
March 2018 - April 2018 (2 months)
Viña del Mar, Chile

Configuration and Calibration of a Microscopy System considering the IX-81 main body microscope from Olympus in conjunction with a system of cameras and filter wheels.

The control system was programmed from Micromanager.

Universidad de Chile
7 years 4 months

Researcher Phd Candidate
January 2016 - December 2017 (2 years)
Santiago Province, Chile

The challenge is to incorporate several tools from the state of art in signal processing and stochastic modeling to improve this kind of inference problems. We propose a comprehensive study of inverse problems at low-rate sampling with strong focus in Geosciences and, in particular, for the reconstruction of catgorical signal. For the first part of this work, I worked on theoretical formulation and experimental analysis of the Optimal Well Placement (OWP) problem. It tries to find the best way of distributing measurements to optimize sensing/locating resources in areas of mining and drilling. This work aims at obtaining the optimal positions for a given amount of available measurements. The characterization of the uncertainty will be a central piece of this formulation. In particular, the OWP problem will be addressed from the perspective of minimizing the remaining field uncertainty and sequential algorithms will be proposed to solve it. We conjecture that OWP based locations will be distributed on transition zones, and then we will assess this behavior for common sensing schemes. For the second part of this work, we derived image restoration/reconstruction techniques by using sparse regularization methods such as Noisy Compressed Sensing (Dantzig Selector and Basis Pursuit DeNoising). I focused on incorporating spatial correlations by experimental covariance matrices and we derive several approaches to simplify scenarios with thousands of unknowns. The Subsurface characterization problem for categorical signals was addressed from sparse representation perspective, incorporating Multi-Point Simulations (MPS) and training images as an additional source of spatial dependence. Finally, the integration of these two topics (adaptive sampling design and inference by Noisy Compressive Sensing) was proposed to improve subsurface characterization techniques based on adaptive sampling and sparsity promotion by the use of Adaptive Compressive Sensing approaches.

Software Development for Scientific Computing on Microscopy with Biomedical Applications

July 2011 - March 2016 (4 years 9 months)
Biomedical Neuroscience Institute (BNI). University of Chile

Biomedical Neuroscience Institute (BNI). University of Chile

Project ICM (P04-068-F, P09-015-F), Laboratory for Scientific Image Analysis (SCIAN-Lab, www.scian.cl), Advanced Imaging and Bioinformatics Initiative (www.aibi.cl), Biomedical Neuroscience Institute, School of Medicine & Faculty of Physical and Mathematical Sciences, Universidad de Chile, Santiago, Chile.

Image Processing Software Development for Scientific Computing on Microscopy with Biomedical Applications.

Development and support for modeling and optimization of algorithms and Software for developmental biology phenomenon and applied sciences. Development of Super-resolution microscopy techniques. Extension of previous works of Millennium Scientific Initiative through the Nucleus of Neural Morphogenesis (NEMO, www.nemolab.cl) and the recently constituted Millennium Biomedical Neuroscience Institute (BNI).

NOTABLE ACCOMPLISHMENTS
• Algorithms for skeletonization in models of biological structures based on 3D cloud points approach and Octree graphs extraction and reduction. • Currently working with the III Physics Institute at the Georg-August-Universität Göttingen (Germany), in a novel super-resolution microscopy technique based on statistical analysis for spatio-temporal data in large microscopy images. Development and extension of the SOFI (spatial-temporal fluctuation imaging) technique for a first implementation in microscopy facilities at the University of Chile. Starting work on the optimization and parallelization of the SOFI calculation using a cluster with MATLAB: Parallel Computing Toolbox and the CUDA concurrent programming language.

Teaching at Graduate Master Program of Medical Informatics

August 2014 - November 2014 (4 months)
Santiago, Chile

Development of Talks and plenaries related with microscopy, optics and super resolution. Performed activities were oriented to multidisciplinary student groups from health and engineering.

Expositions related with physical and mathematical topics applied to spatial localization and Co localization.

Development, implementation and execution of hand-on activities related with basic use of scientific software for image processing and mathematical analysis.

Teaching at Graduate Master Program of Medical Informatics
August 2012 - November 2012 (4 months)
Santiago, Chile

Development of Talks and plenaries related with microscopy, optics and super resolution. Performed activities were oriented to multidisciplinary student groups from health and engineering.

Expositions related with physical and mathematical topics applied to spatial localization and Co localization.

Development, implementation and execution of hand-on activities related with basic use of scientific software for image processing and mathematical analysis.

Research assistant, Support Electronic Engineer
September 2010 - June 2011 (10 months)
Universidad de Chile

Nucleo Milenio NEMO Fac Medicina U Chile at School of Medicine & School of Physical and Mathematical Sciences. UChile

Project NEMO (P07-048-F), Laboratory for Scientific Image Analysis (SCIAN-Lab, www.scian.cl), Advanced Imaging and Bioinformatics Initiative (www.aibi.cl), Faculty of Medicine & Faculty of Physical and Mathematical Sciences, University of Chile, Santiago, Chile.

Development and support for modeling, parallelization and optimization of algorithms and Software of NEMO lab for developmental biology phenomenon and applied sciences. Development of methodology for parameters extraction for Skeleton-like structures in biological images of microscopy, optimization and correction of SCIAN-Soft software and graphic models for visual parameters representation.

Heidelberg Center para América Latina
Project Coordinator

January 2011 - December 2011 (1 year)
Universidad de Chile, Santiago, Chile.

Project Medical Informatics Santiago-Heidelberg (http://www.heidelbergcenter.cl/medicalinformatics/en/), Universidad de Chile, Santiago, Chile.

Support Plan and Development of Excellence center of Medical Informatics in Latin-American between the Universidad de Chile and the Heidelberg Center of University of Heidelberg. Participate and support the First Summer School "Health Informatics": Telemedicine and Health Information Systems (2010) and the First version of Diplomado: "Health Information Systems: Social and technical requirements for successful design and deployment" (2011). Presently supporting the formulation and presentation of Master in Medical Informatics in the Universidad de Chile.

Universidad de Concepcion
1 year 11 months

Researcher- Software Engineer
April 2010 - November 2010 (8 months)
Faculty of Physical Sciences and Mathematics, Universidad de Concepción.

Project BASAL (FB0824/2008), Center of Optics and Photonics (CEFOP, www.cefop.cl).

Development Platform for Micro and Nano Optics Handling interactive in Real-time using optical tweezers and spatial light modulator (SLM).

NOTABLE ACCOMPLISHMENTS
• Satisfactory analysis of the conditions required for optical confinement of a particle and manipulation in relation to the minimum time and minimum shifts to ensure continuity of confinement, with available laboratory equipments.
• Strong Integration with multidisciplinary team of researchers and developers.

Electronic Engineer
June 2010 - July 2010 (2 months)
Faculty of Physical Sciences and Mathematics, Universidad de Concepción.

Project DTT/CEFOP (FB0824/2008), Satellite Teledetection Laboratory-CEFOP (LTS, http://www.lts.udec.cl/).

MCGA visualization interface development for a risk prevention software .Build prototype of graphic module for generator for alerts in real-time monitoring of geopositioning. Developed in Java for project requirements.

NOTABLE ACCOMPLISHMENTS
• Modifications based on field tests in Forestal Celco with satisfactory evaluation and performance.

Development Engineer - Researcher
January 2009 - July 2010 (1 year 7 months)
Faculty of Engineering, Universidad de Concepción, Concepción, Chile.

Project FONDEF (D06I1057), Arthroscopic Training System Based On Interactive Visualization and Haptic Devices (http://www.rodillavirtual.com/index_en.html).

Implementation of algorithms and mathematical modeling of collision detection, calculation of contact and collision between objects modeled by geometric meshs, soft tissue deformation and haptic force feedback. Implementation of interaction of two haptic devices in dual configuration interface developed for Windows Forms. The work has been synthesized in degree thesis "Collision Detection and Haptic feedback in virtual simulator for surgical training".

NOTABLE ACCOMPLISHMENTS
• Successful development of algorithms for haptic threads management, handling the dual haptic devices, communication devices classes, classes management of multiple windows and OpenGL contexts,
collision detection, deformation algorithms, position refund algorithms, implementation of rotational Circular ViewPort for arthroscopic camera view, application of force and dynamical collisions.
• Considered topics are important and current problems difficult to solve in surgical simulation.

Software Engineer
June 2009 - October 2009 (5 months)
Faculty of Engineering, University of Concepción, Concepción, Chile.

Project FONDEF (TE06I1014), Development Platform VICE
Based Visualization Technology and Haptic Devices (VICE, http://www.visualizacionmatematica.com/).

Implementation, review and correction of algorithms for physical and haptic (force feedback) interactions. Implementation of texture-based haptic interaction. Developed in MFC and Flash platform.

NOTABLE ACCOMPLISHMENTS
• Modifications High performance in highly demanding requirements and teamwork

Congelados Pacifico S.A
Operario Línea Salmón
January 2008 - May 2008 (5 months)
Talcahuano, Chile

Tareas de Carga y aseo.

Universidad de Concepcion
Consultor (Estudiante)
August 2007 - December 2007 (5 months)
Concepcion, Chile

Consultor en laboratorios de Computación Unidad de Servicios Informáticos de la Facultad de Ingeniería,

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Education

Universidad de Chile
Doctor in Electrical Engineering, Electrical and Electronics Engineering · (2013 - 2019)

Universidad de Chile
Postgraduate Diploma: "Health Information Systems", Medical Informatics · (2011 - 2011)

Universidad de Concepcion
Electronic Engineering, Electrical, Electronics and Communications Engineering · (2003 - 2009)

University of Concepcion
Bachelor of Science (B.Sc.), Ingeniería civil eléctrica, electrónica y de comunicaciones · (2003 - 2006)

Educational Center of High Technology: CEAT Liceo Mauricio
Hochschild

Instrumental Electronic Technician, Instrumental Electronics · (1999 - 2002)