ANDRES ROGERS

MSc. Civil Engineer, University of Chile

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SUMMARY

Civil Engineer from University of Chile, with a **Master of Science** degree in Chemical Engineering. He has specialized in Data Science, Machine Learning, Innovation, Research & Development, Process Simulation and Programming of Statistical and Computational models in Python and R.

- +3 years of experience in **Machine Learning**, Development of **Mathematical / Statistical Models** for classification and prediction.
- +3 years of experience as **Lead Process Engineer**, leading a team of 6 people in the area of Production and Innovation.
- +2 years of experience as **Project Engineer** in Mining Processes and Environmental Studies.
- +2 years of experience working in projects in **Research and Development** in the areas of biomedicine, mining and agriculture.

RESEARCH

Aug 2010 – Sept 2012

Master's Thesis in Machine Learning applied to Life Sciences – Institute for Cell Dynamics and Biotechnology (ICDB).

- Research in **Machine Learning** applied to Bio-informatics, using Statistical software and programming algorithms for Data Analysis (**R**), Data Mining (**WEKA**) and creating a number of classifiers for **Automatic Learning** over Big Databases of genomic data (>10GB).
- Training of a **Machine Learning Classifier** to detect small non-coding RNA genes, selecting 4 out of 40 best features with high sensibility (89%) and specificity (86%), with AUROC of 92%.
- Proposed 1192 novel non-coding genes in the E. coli genome.
- Graduated *Summa Cum Laude* with the Thesis: *Computational prediction of small non-coding RNA genes in bacterial genomes*. **LINK**

PROFESSIONAL EXPERIENCE

JUL 2021 – Present

Data Science Engineer – BNAmericas

- Developed various **Machine Learning Models** programmed in Python for **NLP (Natural Language Processing)** to perform **Sentiment Analysis** and classification of business news articles with good metrics (F1-score > 85-90%).
- Fine-tuning of state-of-the-art **Transformers** for text **Embeddings** Classification (BERT, RoBERTa, DistilBERT).
- Used typical ML algorithms for **Classification** (Random Forest, MLP Neural Networks, SVM) and **Regression** (Linear, Logistic).
- Regular use of Python and Pandas to solve diverse JIRA tickets.
- Routine **SQL** queries and maintenance of the data-warehouse.

KEY SKILLS

- PYTHON
- MACHINE LEARNING
- DATA SCIENCE
- STATISTICS
- PANDAS
- NUMPY
- SCIKIT-LEARN
- JUPYTER NOTEBOOK
- SCRUM
- AGILE DEVELOPMENT
- MATLIBPLOT
- R
- MATLAB
- WEKA
- DATA VISUALIZATION
- DATA CLEANING
- COMMAND LINE
- GIT VERSION CONTROL
- SQL
- PROBABILITIES
- MATHEMATICAL MODELS
- PREDICTIVE ANALYSIS
- DATA MINING
- CLUSTERING
- CLASSIFICATION
- DATO ANALYSIS
- ALGORITHMS
- MODEL DEVELOPMENT

OTHER COURSES

Hackathon (Competitions):

- MACHINEHACK 2020

Courses (Udemy)

- MACHINE LEARNING A-Z: R & PYTHON FOR DATA SCIENCE
- MASTER IN MACHINE LEARNING: R & PYTHON
- ARTIFICIAL INTELLIGENCE WITH PYTHON
- MACHINE LEARNING: DATA SCIENCE WITH PYTHON

Oct 2017 – Jan 2021

Lead Production and Innovation Engineer – Joyería MAO

- Developed a **Computational Model** programmed in Python to calculate dynamic prices, allowing the use of customized variable products in the online store and improving online sales over 12%.
- **Computational Automatization** of the order management system for the workshop, saving time and improving efficiency over 30%.
- **Lead an Innovation project** to implement a new productive process using CAD design, 3D printing and lost-wax casting, increasing maximum production capacity over 140% per month.
- **Management and Planning** for the workshop production agenda, in charge of managing a team of 6 people with different tasks.

Feb 2016 – Aug 2017

Research & Development Engineer – Entrepreneurship

- Lead projects of **Research and Development**, creating functional prototypes to apply for various startup contests: StartUp Chile, FIA, CORFO and CONYCIT.
- Some projects include the formulation of a Hydroponic Bio-fertilizer and a solar-powered Bio-reactor module for the production of the *nutraceutical* blue-green algae *Spirulina*.

Mar 2015 – Dec 2015

Research & Development Engineer – MD Stemcel

- **Research and Development** of a medical device for a **CORFO Project,** for the purification of **Stem Cells** from human adipocytes.
- **Product Development** from business idea into a fully functional minimal viable product (MVP).
- **Experimental Validation** of the prototype in the laboratory of the Medicine Faculty of the University of Chile with successful results.

Nov 2012 – Oct 2014

Project Engineer in Mining Processes – Geotechnos

- **Development of a Computational Model** for the Simulation of the Copper leaching process, programming a **mathematical model** in **MATLAB** improving process parameters over 7%.
- **Capital Expenditure (CAPEX) estimation** for a project with a budget of $USD 23,1 MM, for the *Cerro Negro* mining operation.
- **Basic Engineering Project** for a copper dynamic leaching pile, calculus report, mass balance and flowchart diagrams.
- **Environmental Impact Study**, redacting technical reports and analyzing environmental law applicable to the project.
- **Project Control,** reporting time and budget to the Manager.

EDUCATION

2010 - 2012

University of Chile, Faculty of Physical and Mathematical Sciences

- **Master of Science in Chemical Engineering**, graduated *Summa Cum Laude* and first of the class.

2004 - 2010

University of Chile, Faculty of Physical and Mathematical Sciences

- **Civil Engineering with mention in Biotechnology**, graduated *Summa Cum Laude and first of the class*.
- This innovative degree shares 60% of classes with Chemical Engineering, focusing in Biochemical Processes and Genomics.

LANGUAGES

- NATIVE SPANISH
- **ADVANCED ENGLISH** (ORAL AND WRITTEN), CERTIFIED BY IELTS ACADEMIC TEST (SCORED 8 OUT OF 9).

PERSONAL PROFILE

- ADVANCED COMPUTATIONAL AND PROGRAMMING SKILLS, SIMULATION, DATA MINING AND MACHINE LEARNING.
- ADVANCED MATHEMATICAL AND STATISTICAL SKILLS, OPTIMIZATION AND DATA ANALYSIS.
- ALWAYS IN PURSUIT OF EXCELLENCE, WITH STRONG ETHICAL VALUES, PROACTIVE, FLEXIBLE, METHODICAL AND ANALYTICAL.
- GOAL ORIENTED, RESPECT FOR DEADLINES, CAN WORK UNDER PRESSURE BOTH IN TEAMS OR INDEPENDENTLY.

TEACHING

Assistant Professor (2009)
Engineering Faculty U. of Chile

- DYNAMIC PROCESSES AND CONTROL.
- INTRODUCTION TO CHEMISTRY.
- MOLECULAR BIOLOGY II.

VOLUNTEERING

CO-FOUNDER OF STUDENT GROUP ACCAN FOR ANIMAL PROTECTION, CURRENTLY WITH +90 MEMBERS OF THE ENGINEERING FACULTY OF UNIVERSITY OF CHILE.