

Adolfo Villalobos

DATA SCIENTIST · MATHEMATICAL ENGINEER

Santiago, Chile

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"Meaningful Work. Meaningful Relationships."

Summary

Mathematical Engineer with a strong background in applied mathematics, statistical modeling and computer science. 4+ years' experience using predictive modeling, data processing, and data mining algorithms to solve business/engineering problems with multidisciplinary teams. I pride myself on the high-level problem-solving skills I have used in all roles to overcome adversity and guarantee the success of my team. I am super excited about using mathematical modeling and data science to solve the world's hardest problems.

Work Experience

DICTUC UC.

Santiago, Chile

DATA SCIENTIST AT JOINT VENTURE WITH AGROSUPER S.A. INNOVATION GROUP

March. 2019 - June 2020

- Developed a prototype to detect the presence of risk factors among slaughterhouse workers, using data from inertial sensors on the wrists.
- Full ownership of the development process: Translating business requirements into data science questions and metrics, development of a measurement system (software and hardware), data engineering (ETL), machine learning pipeline and inference.
- Achieved 98% accuracy in the detection of risk factors associated with improper technique.
- Evaluated the application of the prototype by proposing a retraining strategy to reduce the expected injury cost and improve productivity.
- Leveraged stakeholder input to improve prototype design.

Institute for Mathematical and Computational Engineering UC.

Santiago, Chile

PROJECT ENGINEER & RESEARCH

March. 2018 - June 2019

- Developed predictive modeling tools for industry clients to predict future values of critical operational variables.
- Back-tested the models on historical data, and forecasted the values for three months into the future, reducing average MAPE error to 2%.

Clase Ejecutiva UC

Santiago, Chile

CHIEF TEACHING ASSISTANT - BIG DATA FOR DECISION MAKING DIPLOMA

Aug. 2018 - Sept. 2020

- Communicated complex mathematical concepts into useful information for professionals with junior to senior roles.

Central Bank of Chile

Santiago, Chile

DATA ANALYST INTERNSHIP, FINANCIAL RESEARCH GROUP

Dec. 2017 - March. 2018

- Analyzed survey data to demonstrate the existence of debt underreporting by Chilean households.
- Implemented regression models to evidence and quantify the influence of debt-type and household size in the extent of underreporting.
- Communicated policy-related findings to senior economists.

Presentation

II International Conference on Big Data and Decision Support Systems in Agriculture

Lleida, Spain

PRESENTER

Oct. 2020

- Presented a research work that proposes the use of ML models to detect risk factors in slaughterhouses by monitoring sensor data obtained from devices on the workers' wrists. Received the award for "Best Article".

Education

Pontificia Universidad Católica de Chile (PUC)

Santiago, Chile

MASTER OF SCIENCE IN ENGINEERING, DEPARTMENT OF INDUSTRIAL ENGINEERING

Aug. 2018 - Dec. 2020

- Graduated with maximum distinction. Thesis on the usage of machine learning algorithms in IoT applications. Paper publication pending.
- Coursework on advanced machine learning topics (e.g.: Deep Learning, Online Learning, Bayesian Inference).

Pontificia Universidad Católica de Chile (PUC)

Santiago, Chile

B.S. IN MATHEMATICAL ENGINEERING

Mar. 2013 - Aug. 2018

- Teaching assistant for undergraduate/graduate courses.
- Research assistant in high-performance computing and stochastic optimization problems.

Extracurricular

PERSONAL PROJECTS

FALLA UC

Jan. 2018 - Jan. 2019

- A web based predictive maintenance dashboard developed in JavaScript for a chilean client, using AWS RDS and AWS Gateway to store streams of temperature data, and AWS Lambda for serverless transformation and data analysis.

DEBTCONTROL BOTS

Jan. 2019 - Dec. 2019

- A web-scraping tool developed in Python to automatize payment notifications for a chilean loan-servicing company.

DEEP LEARNING EXPERIMENTS

2019-2020

- Implemented several NLP models for text-translation and text-summarization problems using DL frameworks. See: <https://github.com/AdolfoVillalobos/deep-learning-projects>.

LEADERSHIP

MATHEMATICAL ACADEMY, LEONARDO MURIALDO SCHOOL

2013-2015

- Founder and first teacher of an academy for the training of high school students to compete in mathematical olympiads.

PRESIDENT, SIAM-PUC STUDENT CHAPTER

Core-Member & President (2016)

- Reformed the chapter by engaging students to participate in activities focused on applied mathematics, and encouraged networking between students and professors.
- Co-organized the National Encounter for Mathematical Engineering 2015, a congress for students interested in applied mathematics.

Technical Skills

Machine Learning stack	Numpy, Scipy, Pandas, nltk, scikit-learn, Keras, Tensorflow, Pytorch
Programming Languages	Python, R, SQL, JavaScript, Golang
Tools and Platforms	Linux, Git, AWS
Languages	English, Spanish