Adolfo **Villalobos**

Data Scientist · Mathematical Engineer

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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 building data-driven tools for people and businesses, using the latest and greatest data science frameworks and techniques.

Work Experience

DICTUC UC. — *Santiago, Chile*

Data Scientist at joint venture with Agroupser S.A. Innovation Group — *March. 2019 - June 2020*

- Developed a data-driven prototype to detect musculoskeletal disorders among slaughterhouse workers using inertial sensors.
- Full ownership of the development process: Business requirements, exploratory data analysis, hypothesis ideation, experiment design, ETL pipeline, ML pipeline and inference.
- Achieved 98% accuracy in the detection of risk factors.
- Proposed and evaluated a strategy to reduce injury cost using the prototype.
- Leveraged stakeholder input to improve prototype design.
- Technology stack: Python 3, Scikit-learn, Jupyter Notebook, AWS RDS, AWS EC2, SQLite, Raspberry Pi.

Institute for Mathematical and Computational Engineering UC. — *Santiago, Chile*

Project Engineer & Research — *March. 2018 - June 2019*

- Developed a model to predict the future values of operational variables for industry clients.
- Average MAPE error was reduced to 2%.
- Technology stack: Python 3, Scikit-learn, SQL.

Central Bank of Chile — *Santiago, Chile*

Data Analyst Internship, Financial Research Group — *Dec. 2017 - March. 2018*

- Analyzed survey data to understand the nature of debt underreporting by Chilean households.
- Implemented regression models to evidence and quantify the influence of debt-type and household size in underreporting.
- Communicated relevant findings to senior economists.
- Technology stack: R, STATA.

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.

Personal Projects

Programming & Data Science

Falla UC *Jan. 2018 - Jan. 2019*

- A web based predictive maintenance dashboard for a chilean client, using AWS Lambda, AWS RDS and AWS Gateway technologies, to register and analyze temperature data on real time.

DebtControl Bots *Jan. 2019 - Dec. 2019*

- A software tool to automatize payment notifications for a chilean loan-servicing company, using web-scrapping tools in Python.

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`.

Extracurricular activites

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