Alejandro **Álvarez**

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Education

Carnegie Mellon University, Heinz College *Pittsburgh, PA*

MASTER OF INFORMATION SYSTEMS MANAGEMENT - BUSINESS INTELLIGENCE AND DATA ANALYTICS *December 2021 (expected)*

- Coursework (Fall 2020 - Spring 2021): Machine Learning for Problem Solving, Introduction to Deep Learning, Neural Networks for NLP, Object-Oriented Programming, Data Focused Python, Database Management, Unstructured Data Analytics, Applied Econometrics, Advanced Business Analytics, Writing for ISM.

Instituto Tecnológico Autónomo de México *Mexico City, Mexico*

BACHELOR OF SCIENCE IN APPLIED MATHEMATICS (GRADUATED WITH HONORS) *October 2015*

- Thesis work: "Random Variants of the Kaczmarz Method", 2015. Independent and individual study focused on the theoretical background and computational efficiency behind two of the random variants of this algorithm to numerically solve linear systems.
- Coursework: Numerical Analysis, Linear Programming, Numerical Optimization, Applied Statistics, Linear Algebra, Real Analysis, Functional Analysis, Measure Theory; Applied Data Science Workshop at Carnegie Mellon University (Fall 2015).
- Adjunct Faculty Member of the Probability and Statistics Department (Spring 2015) and the Mathematics Department (Fall 2013 - Fall 2014).

BACHELOR OF ARTS IN ECONOMICS - ECONOMIC THEORY *July 2015. Pending graduation*

- Coursework: Advanced Microeconometrics, Advanced Macroeconometrics, Consumer Theory, General Equilibrium Theory, Game Theory.

Project Experience

IMPACT ASSESSMENT OF A STUDENT LOANS PROGRAM TO ATTEND GRADUATE SCHOOL ABROAD (FUNED) @ SAI LAW & ECONOMICS *2020*

- Designed and conducted an extensive electronic survey. Managed the data gathering and cleansing processes. Conducted the process to stratify the sample using unsupervised methods (PCA and clustering) and supervised the econometric analysis to assess the programs' impact on different beneficiaries' profiles.

ECONOMIC SPILLOVER OF AN IMPORTANT DRINK MANUFACTURER @ SAI LAW & ECONOMICS *2019*

- Gathered product-level information on sales, employees, and supplies purchases of 11 companies in 32 states in Mexico. Designed a relational database to store such information. Developed an internal R package to implement Input-Output methodologies. Delivered through an R Bookdown.

IMPACT ASSESSMENT OF A CHILDREN'S MEAL CENTERS PROGRAM (COMEDOR SANTA MARÍA A.C.) ON THEIR EDUCATION @ SAI LAW & ECONOMICS *2018*

- Worked with the program's information and public information from the Mexican Population Census to create control groups through a propensity score matching methodology and measure the difference in school attendance rates.

UPGRADE OF ANALYTICS' TOOLS @ SAI LAW & ECONOMICS *2016 - 2019*

- Led and implemented Economic Consulting Team's toolbox migration, from 100% Excelusage to 100% R usage. Actively trained firm's Partners, JuniorAssociates, and Analysts, in the usage of R Programming Language. Established Git as my team's version control tool. Self-taught to programming with R and using Git.

PHARMACEUTICAL INVENTORIES' OPTIMIZATION - TEAM CAPSTONE PROJECT @ UPMC ENTERPRISES - CARNEGIE MELLON UNIVERSITY *Summer 2015*

- Developed a predictive algorithm with Python to make projections about the drugs needed to be purchased, based on the patients' visits and medical records, which consisted of estimating multivariate distributions to find the optimal quantities in terms of a loss function.

R PACKAGE TO SCRAPE THE MEXICAN PRESIDENT PRESS CONFERENCES @ GITHUB.COM/ALEJANDROXAG/AMLOCONF (PERSONAL PET PROJECT) *October 2020*

- Developed an R package to web scrape the stenographic versions of the Mexican President's conferences, for text mining or sentiment analysis.

Skills

PROGRAMMING LANGUAGES & SOFTWARE

- Object-Oriented and Data-Focused Programming: Python, Java and R (package development); Statistical Analysis: Python and R; Database Management: MySQL and SQL *Plus; Reproducible documents, data visualization and markup languages: R, R Markdown, Shiny, Jupyter, LaTeX. Notions of HTML, CSS and XML; Version control: Git; Command-line interaction: Windows PowerShell; Other Software: Google Suite (including R packages for interacting with it), Microsoft Office Suite.

ONLINE COURSES - COURSERA (C), DATACAMP (D)

- Python: Introduction to Python (D), Intermediate Python (D), Python DS Toolbox 1 & 2 (D); Git: Introduction to Git (D); ML: ML for everyone (D), Machine Learning by Stanford University (C).

Experience

SAI Law & Economics - Economic Consulting Team *Mexico City, Mexico*

SENIOR ASSOCIATE *July 2016 - July 2020*

- Managed +50 projects, in charge of their strategic and methodological planning, and execution (Statistical Analysis, Data visualization, Database Design, Economic analysis). Participated in +100 projects for +100 clients. Billed +1.1 Million USD. Coordinated the JA's and BA's team.

JUNIOR ASSOCIATE *October 2015 - June 2016*

- Managed +10 projects and participated in +20 projects. Supervised and improved teams' usage of technical and analytical tools.

FULL-TIME ECONOMIC ANALYST *June 2014 - September 2015*

- Participated in +30 projects. Pioneered the use of R Programming Language.