Carlos Felipe **Alcala Perez**

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Data Scientist

Summary

Accomplished Data Scientist with extensive experience developing and implementing data-driven and machine learning solutions in the Building Efficiency and Chemical industries. Highly skilled in data gathering, transformation and visualization, as well as hypothesis testing, experimental design, analysis, development and deployment of algorithms.

Expertise

- Multivariate Statistical Analysis
- Machine Learning
- Mathematical Analysis
- Data Analytics and Visualization
- Application Development
- Research and Development

Experience

Johnson Controls — **Oct. 2011 - Jan. 2020**

Principal Research Engineer — *Milwaukee, WI* — **Dec. 2017 - Jan. 2020**

- Utilized advanced optimization, machine learning and data analytics methods to improve the efficiency of heating, ventilation and air conditioning (HVAC) systems.
- Key role in the transfer of newly developed technology into products and applications.
- Multiple patents granted.

Senior Research Engineer — *Milwaukee, WI* — **May 2015 - Dec. 2017**

- Developed methods for monitoring the performance of PID controllers, detection of steady state operation of HVAC equipment, and reduction of energy consumption in wireless thermostats while keeping acceptable comfort standards. Applied advanced mathematical tools as well as artificial intelligence, machine learning and traditional statistical methods to achieve business goals.

Senior Research Engineer — *Mexico City, Mexico* — **Jan. 2013 - May 2015**

- Developed and tested data-driven methods for fault detection and diagnosis in connected chillers.

Senior Research Engineer — *Milwaukee, WI* — **Oct. 2011 - Jan. 2013**

- Developed a method for adaptive sampling of PID controllers. Analyzed vast quantities of test data, and automated the report generation for these tests.

Internship Experience

The Dow Chemical Company — *Freeport, TX* — **May 2010 - Aug. 2010**

Summer Research Intern

- Developed a VBA application for multivariate statistical monitoring of continuous and batch processes.

Capstone Technology — *Seattle, WA* — **2006 - 2009**

Summer Engineering Intern — **May. 2009 - Aug. 2009**

- Developed a multivariate image analysis application to monitor combustion efficiency in furnaces.

Summer Engineering Intern — **May. 2007 - Aug. 2007**

- Developed a multivariate statistical application for statistical modeling and prediction in chemical processes.

Summer Engineering Intern — **May. 2006 - Aug. 2006**

- Developed a multivariate statistical application for detection and diagnosis of sensor and process faults.

NMC North Microelectronics *Beijing, China* **Jun. 2008 - Jul. 2008**

Summer Engineering Intern

- Developed a multivariate statistical application for monitoring the operation of a semiconductor manufacturing process.

Education

MicroMasters in Statistics and Data Science *Online* **Sept. 2020 - Oct. 2021**

Massachusetts Institute of Technology

Doctor of Philosophy in Chemical Engineering *Los Angeles, CA* **Aug. 2007 - Aug. 2011**

University of Southern California

- Awarded a Roberto Rocca Fellowship.

Master of Science in Chemical Engineering *Austin, TX* **Aug. 2005 - May 2007**

The University of Texas at Austin

- Fulbright Scholarship Recipient.

Bachelor of Science in Chemical Engineering, summa cum laude *Ciudad Madero, Mexico* **Aug. 1999 - Dec. 2003**

Instituto Tecnologico de Ciudad Madero

Skills

Programming R, Python, SQL, Matlab, VBA, C#
Markup LaTeX, Markdown, RMarkdown
Frameworks/Libraries PyTorch, Tensorflow, numpy, pandas, dplyr, ggplot2, tidyverse
Applications Simulink, Dymola, RStudio, Docker, Git, Github, VS Code, Sublime Text, Office 365
Languages English, Spanish (native)

Certifications

Computational Thinking using Python *MIT* **June, 2020**

edX

Credential ID: 03ee77749a44490190b0b25b24876e31

Statistics with R *Duke University* **Oct. 29, 2018**

Coursera

Credential ID: UWG3PS5EXMBJ

Machine Learning *University of Washington* **Feb. 1, 2017**

Coursera

Credential ID: 2VHFDHW5GUK6

Data Science *Johns Hopkins University* **Apr. 20, 2016**

Coursera

Credential ID: W9DB45S3CGDZ