

Adriana Flores

📍 Fort Collins, CO

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PROFILE

Data scientist with machine learning expertise and strong math, programming and engineering background. Experience with complex projects and passionate about learning new techniques and sharing knowledge. I am professionally trained in written and oral scientific communications. I am an active member in local data science events.

SELECTED WORK EXPERIENCE

Nov. 2016 – Present | **Mathematics Instructor: Mathnasium** | Fort Collins, CO.

I teach 2nd to 12th grade kids, helping them build mathematical foundation and confidence, providing them with tools to master the “how and why” and filling foundational gaps.

Skills: Communicating my knowledge in multiple ways, providing motivation and constructive feedback.

Jul. 2011 – Oct. 2016 | **Ph.D. Student and Post-Doctoral Student: Rice University** | Houston, TX.

I performed end-to-end, large-scale system design, implementation and evaluation to advance wireless technologies. I posed research questions, then prototyped and deployed systems using both hardware and software tools. I evaluated their performance by obtaining experimental data, and drew insights from it. I shared the results of my projects with the community through paper publication and presentations at top-tier conferences.

Skills: System design, research, data analysis, software and hardware development, proposal writing, leadership and mentoring multidisciplinary teams, teaching, written and oral scientific communications.

Aug. 2009 – Jul. 2010 | **Project Lead: KME Mould Mexico** | Monterrey, Mexico.

Designed and developed a web application for production control to auto-supervise the multi-month process of nickel coating of steel plates. My system helped the company learn the real duration of each step, understand delays to perform delay management and cost recalculation of plates. The system provided real-time data statistics on technician input start-end timing data which identified and predicted delays and estimated product delivery date to customer.

Skills: Client communication, programming, web development, database design and management, data statistics and visualization.

TECHNICAL SKILLS

Machine Learning: Supervised learning (linear regression, logistic regression, neural networks, support vector machines), Unsupervised Learning (K-means clustering, dimensionality reduction (PCA, P-PCA, FA), anomaly detection), Special applications (recommender systems, large scale machine learning), System design (diagnosis bias vs. variance, regularization), Evaluation of algorithms (learning curves, error analysis, ceiling analysis, error metric for skewed data, precision and recall).

Software and Programming Languages: Python (numpy, pandas, scikit-learn), Spark, Matlab, C/C++, Linux (Bash Shell, Awk), WebDev (MySQL, HTML, CSS, PHP), LaTeX.

Hardware: Arduino, Software Defined Radios, Network Interface Cards, among others.

LANGUAGES

English (Fluent), **Spanish** (Native), **French** (Basic)

EDUCATION

2013 (Aug.) – 2016 (May) | **Ph.D.** in Electrical Engineering at **Rice University** – Houston, TX.
2011 (Aug.) – 2013 (Aug.) | **M.S.** in Electrical Engineering at **Rice University** – Houston, TX.
2005 (Aug.) – 2009 (Dec.) | **B.S.** in Electrical Engineering (with Honors) at **ITESM** – Monterrey, México.

CERTIFICATES

2017 (Jan.) – Present | Applied Data Science with Python by **University of Michigan** on Coursera.
2016 (Oct.) – 2017 (Jan.) | Certificate in Machine Learning by **Stanford University** on Coursera.

SELECTED PROJECTS

NEUROSCIENCE PROJECTS

Factor-Analysis Methods for Higher Performance Neural Prostheses. Neural signal-enabled prostheses seek to translate the electrical signals from the brain to be used as guidelines for movement. In this project I studied statistical models to increase the precision to predict a subject's intended reach to achieve high-performance decoding of neural activity for neural prostheses.

Statistical Neural Signal Processing. Own implantation of K-means clustering and EM algorithms for dimensionality reduction in Matlab for neural signal processing to classify neuron spikes and visualize high-dimensional neural activity.

CERTIFICATE PROJECTS

Supervised Learning. I developed various regression projects to predict company profits, housing market pricing, line-production product quality, water level in a reservoir. Additionally, I built a Neural Network to recognize handwritten digits and Support Vector Machine to classify spam email.

Unsupervised Learning. Implemented various unsupervised learning algorithms to perform: image compression by reducing the number of colors through K-means, finding a low-dimensional representation of face images through PCA, anomaly detection of failing servers on a network, collaborative filtering to build a recommender system for movies.

ACADEMIC HONORS AND AWARDS

ECE Distinguished Student Service Award, 2016.
Texas Instruments Distinguished Student Fellowship, 2011 - 2016.
Best Paper Award, IEEE Workshop on Cognitive Radio Architectures for Broadband, 2014.
Rice University ECE Department Grant, 2011 - 2012.
