

# Miguel Fernandez Montes

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## EDUCATION

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### University of California, Berkeley

MEng Industrial Engineering and Operations Research **GPA: 3.93/4**

Specialization in Data Science, Statistical Modeling, Machine Learning and Optimization

Berkeley, CA

Aug. 2019 - May 2020

### Technical University of Madrid

MS Industrial Technology Engineering **GPA: 9.03/10**

Madrid, Spain

Sep. 2017 - Jul. 2019

### Technical University of Madrid

BS Industrial Technology Engineering **GPA: 8.11/10**

Graduated in the **top 3%** of the class

Madrid, Spain

Sep. 2013 - Sep. 2017

## SKILLS

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**Technical skills:** Python, numpy, pandas, scikit-learn, statsmodels, pytorch, tensorflow, keras, matplotlib, SQL, R, dplyr, ggplot2, Hadoop, Spark, BASH

**Research interests:** Deep Learning, Time Series Analysis, Bayesian Data Analysis

## EXPERIENCE

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### PayPal

San Jose, CA

#### Machine Learning Scientist

Mar. 2021 - Present

- Owning the complete **Machine Learning life cycle** from data discovery to deployment for multiple use-cases in the Payments domain
- Trained, evaluated and deployed **deep neural network** models for sequential data (1D convolutional NNs and **LSTM**) for daily inference on **100M+ records** with direct impact on payments processing latency (approx. **70% reduction**)
- Developed first ML model for novel Payments use-case leveraging newly **engineered features** and **Gradient Boosted trees** driving potential transaction expense **savings of +50%** and increased authorization rate

### 159 Solutions, Inc.

San Mateo, CA

#### Analytics Associate

Jul. 2020 - Feb. 2021

- Coordinated on-shore and off-shore teams to support the operation and development of a custom **analytics** platform serving **100+ users** leveraging **AWS data warehousing** tools

### Technical University of Madrid

Madrid, Spain

#### Machine Learning Research Assistant

Nov. 2018 - Jul. 2019

*Funded by Collaboration Grant from the Technical University of Madrid*

- Processed gait signals from medical trials using Python to build **time-frequency data representations**
- Investigated **machine learning models** for neurodegenerative disease diagnostics
- Trained and validated deep learning models (1D and 2D **Convolutional Neural Networks**) with **keras**

## PROJECTS

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### AI for Urbanism: Analysis of urban outdoor areas | Spacemaker

Sep. 2019 - May 2020

*Master of Engineering Capstone Project in partnership with Spacemaker AI*

- Developed **data pipeline** to retrieve and process urban planning data from **AWS S3**
- **Engineered** and extracted geometric **features** from architectural layouts to create a data set of urban spaces
- Conducted unsupervised learning methods (**principal component analysis** and **clustering**) to categorize outdoor spaces

### Review and comparison of subset selection methods for linear regression

Mar. 2020 - May 2020

- Implemented a discrete first-order optimization method and a mixed integer program for best subset selection in **Python**
- Ran **120+** model fitting experiments across a wide range of synthetic and real datasets
- Analyzed the **statistical accuracy** and **support recovery** of several statistical learning methods for exact and approximate subset selection e.g. the **Lasso**, relaxed Lasso and best subset selection