

OSCAR ALEJANDRO GOMEZ QUINTERO

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EDUCATION

B.S. Mathematics, B.S. Computer Science

New York University Abu Dhabi, *Abu Dhabi, UAE*

NYU Courant Institute of Mathematical Sciences, *New York, USA*

GPA: 3.89 / 4.00

Aug 2016 – May 2020

Feb 2019 – May 2019

Relevant Coursework: Machine Learning, Algorithmic Foundations of Data Science, Visual Analytics, Probability and Statistics, Advanced Probability, Mathematical Statistics, Software Engineering, Computational Social Science

SKILLS

Programming: Python, R, C, C++, JavaScript, HTML, CSS, Git

Data Science / Visualization: scikit-learn, Keras, SQL, Spark, D3.js, Bokeh, Plotly, Tableau, LaTeX

Languages: Spanish (Native), English (Fluent), French (Basic)

WORK EXPERIENCE

Data Science Intern

nexquare, *Dubai, UAE*

June 2019 – Aug 2019

- Enhanced machine learning models, used to predict student performance and employability, that process 800 million data points across more than 220 schools in over 10 countries.
- Developed an interpretable machine learning module that provides students, educators, regulators, and ministers explanations for the models' decisions and incorporated it within the company's advanced analytics platform.
- Implemented model agnostic interpretability algorithms (local feature importance and counterfactual explanations).

RESEARCH PROJECTS

Machine Learning Explainability and Visualization

Visualization and Data Analytics Lab at NYU, *New York, USA*

Aug 2019 – Present

June 2018 – Aug 2018

- Developed machine learning models to predict customer credit risk from a FICO line of credit dataset.
- Generated instance explanations by implementing algorithms to detect the most important features and the minimal set of changes needed to alter the model's output.
- Developed global explanations in the form of interactive visualizations to explore the individual explanations through a hierarchical organization that groups similar instances.
- Expanded the project by developing *ViCE*, a tool that generates and provides an interactive visual interface for counterfactual explanations [1].

Machine Learning for Musical Analysis

Music and Sound Cultures Group at NYU Abu Dhabi, *Abu Dhabi, UAE*

Sept 2019 – Present

Feb 2017 – May 2018

- Developed and implemented the computational analysis of two non-western music collections for the project "Computationally-Engaged Approaches to Rhythm and Musical Heritage" [3].
- Performed musical feature extraction and conducted an exploratory analysis of the data by using dimensionality reduction with deep autoencoders.
- Developed an interactive visualization depicting the musical similarity of the data by using k-means clustering and t-SNE embedding, where users can listen to the clips and explore artists clustered together [2].

LEADERSHIP

President, NYUAD Mathematics Club

New York University Abu Dhabi, *Abu Dhabi, UAE*

Jan 2017 – Dec 2018

Sept 2019 – Present

- Programmed activities for high school students and guest speaker talks for university students.
- Prepared the syllabus and led the weekly training sessions in preparation for international competitions.
- Coordinated and supervised NYUAD's team participation in the International Mathematics Competition of 2018 and the Al-Khwarizmi International Mathematical Competition of 2018.