

Miguel Bonmati Conner

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Education

Barcelona School of Economics **Barcelona, Spain**

Masters in Data Science Methodology September 2022 – July 2023

Thesis: Leveraging Satellite Imagery to Assess Road Quality in the Democratic Republic of the Congo

Courses: Statistics, Machine Learning, Deep Learning, Causality, Optimization and Computing

Stanford Inter-University Center for Japanese Language Studies **Yokohama, Japan**

Toshizo Wantanabe Fellow August 2019 – June 2020

Reed College **Portland, OR, United States**

Bachelor of Arts | Physics August 2011 – May 2015

Academic Commendations (2014, 2015)

Undergraduate Thesis: Tunneling in a Quantum Analog: An Investigation of a Bouncing Oil Drop System

Professional Experience

Institut d'Anàlisis Econòmica – Universitat Autònoma de Barcelona **Barcelona, Spain**

Data Science Research Intern September 2023

- Building an SetFit NLP model to predict riots at the subregional level using categorized twitter data.

World Bank Group **(Remote) Barcelona, Spain**

Data Science Consultant May 2023 – June 2023

- Member of a multidisciplinary team of researchers aiming to train a neural network that evaluates road quality in the Democratic Republic of the Congo (DRC), using free imagery
- Scraped ~3 million 256x256 satellite image tiles from Google Earth at a resolution of 60 cm/pixel
- Helped create a preprocessing pipeline to select images containing roads
- Trained 2-class and 5-class CNN EfficientNetv2 models, achieving an AUC of 0.75 for the binary classifier, approaching benchmarks in the literature despite using poorer resolution imagery.

Holaluz **Barcelona, Spain**

Data Science Intern April 2023 – June 2023

- Implemented NLP models to classify customer help tickets (including ChatGPT and VertexAI APIs)
- Leveraged Generative AI NLP models to effectively create 100+ fake tickets to supplement training data for classes with few examples.

Skills

Programming: Python (scikit-learn, pandas, NumPy), R, SQL, UNIX, Git, PyTorch, deep learning, time series analysis, supervised/unsupervised learning, statistics, NLP

Languages: Fluent in English and Spanish, intermediate Japanese (N2).

Publications

Farris, Holly & **Conner, Miguel** & Chevrier, Vincent & Rivera-Valentin, Edgard. (2017). [Adsorption driven regolith-atmospheric water vapor transfer on Mars: An analysis of Phoenix TECP data](#). Icarus. 308.

Involvements

Private tutoring in Math and Physics (middle school to college level) for 2 years;

English teacher in Japan (elementary to middle school) for 2 years.