RICARDO MUÑOZ SÁNCHEZ

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EDUCATION

THE UNIVERSITY OF EDINBURGH   *Edinburgh, United Kingdom*
Master of Science in Artificial Intelligence (Merit)   *Sep 2019 - Aug 2020*
- Earned the CONACYT International Scholarship – Central Region 2019 by the CONACYT (Sep 2019 – Sep 2020).
- Dissertation project: Exploring the Relationship Between Intrinsic and Extrinsic Bias Metrics in Spanish Word Embeddings. Advisors: Seraphina Goldfarb-Tarrant, Adam Lopez. ([link](#))
- Other projects: implemented a network for multimodal sentiment analysis; surveyed the current state of computational linguistics regarding Ancient Egyptian.
- Took courses in data science, machine learning, neural networks, Bayesian neural networks, reinforcement learning, deep learning, natural language processing (NLP), natural language understanding (NLU), natural language generation (NLG), game theory, and computational cognitive neuroscience.

UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO (UNAM)   *Mexico City, Mexico*
Bachelor of Science in Mathematics   *Aug 2012 - Sep 2018*
- Final Grade: 8.93/10.
- Earned the TELMEX Scholarship for Academic Excellence by the Carlos Slim Foundation (Aug 2011 – Jun 2016).
- Dissertation project: Studied the order type of maximal chains of subgraphs of the Rado graph that are isomorphic to it. Advisor: David Meza Alcántara. ([link](#))
- Took courses in calculus, linear algebra, logic, probability, statistics, mathematical analysis, and abstract algebra.

WORK EXPERIENCE

APLI *(10+ employee recruitment solutions startup; [website](#))*   *Mexico City, Mexico*
Data Scientist   *Apr 2021 – Present*
- Currently working on bias mitigation for the company's AI systems.

REDUCE SOLUCIONES *(10+ employee renewable energy startup; [website](#))*   *Mexico City, Mexico*
Data Science Advisor   *Sep 2020 – Present*
Director of IT   *Jul 2016 – Aug 2019*
Co-Founder   *Jul 2016*
- Formulated 23 different processes and procedures for the company by coordinating with areas such as marketing, operations, HR, among others.
- Coordinated the setup of the company's computing systems, enabling remote tracking the performance of installed systems for clients, which doubled the amount of sales.
- Streamlined the design process of photovoltaic and solar thermal systems by implementing machine learning solutions, reducing the time needed for these projects by over 70%.

UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO (UNAM)   *Mexico City, Mexico*
Undergraduate Internship, COLMENA Mission ([project website](#))   *Nov 2015 – Feb 2017*
- The objective of the mission is sending a swarm of nine self-assembling robots to the moon and is expected to launch in 2021.
- Provided input on the initial design of the robots through preliminary research and discussions with a multidisciplinary team.
- Advised on the viability of the project by simulating and illustrating that the robots had desirable clustering patterns over 85% of the time.

RESEARCH AND PUBLICATIONS

FIRST AUTHOR PAPERS
- Seraphina Goldfarb-Tarrant*, Rebecca Marchant*, **Ricardo Muñoz Sanchez***, Mugdha Pandya*, Adam Lopez. "Intrinsic Bias Metrics Do Not Correlate with Application Bias". To appear in ACL-IJCNLP 2021. ([arxiv link](#))

* equal contributions

CERTIFICATIONS AND TRAINING

DATACAMP
- Data Analysis with Python (2018), Python Programming (2018)

ACTIVITIES

CODE AGAINST HATE *Online*
Winning Team (presentation) *Sep 2020*
- Challenge: propose a way to reduce online hate speech without censoring freedom of speech in 48 hours.
- Proposed Hate.no, a plugin that would alert a user if a message could be hate speech, providing an opportunity to change said message before posting.
- Assessed and determined the backend architecture of the app through discussions with the rest of the technical team and facilitated communication between the technical and the conceptual teams.
- Reviewed the cost of moderating comment sections and determined that this solution would slash moderation costs by at least 20%.

HELLO WORLD HACKATHON 2020 *Edinburgh, United Kingdom*
Runner-up of the Quantum Black challenge *Feb 2020*
- Challenge: set up a pipeline for a ML project with Quantum Black's kedro package in less than 24 hours.
- Proposed an AI system that predicts whether an epidemic of an airborne disease will turn into a pandemic.
- Examined possible concepts and recommended creating a new dataset (with less than 30 datapoints) by brainstorming with the rest of the team.
- Implemented the pipeline and the neural network through pair programming, achieving 60% accuracy.

TECHNICAL SKILLS

- Python (Expert). Packages mastered include: pandas, Numpy, scikit-learn, xgboost, PyTorch, NLTK, Gensim, spaCy, matplotlib, seaborn, jupyter.
- Git / Github (Expert)
- SQL (Advanced)
- C++ (Advanced)

LANGUAGES

- Spanish (Native Speaker)
- English (IELTS 7.5; C1 equivalent)
- French (DELF B1)