

Valentina Roquemen-Echeverri

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Summary

- ✓ Algorithms and data scientist with 3+ years combined academic and industry experience in signal processing, statistical analysis, and ML modeling.
- ✓ Proficient in the use of data science and ML development tools (e.g., Pandas, SciPy, Scikit-learn, TensorFlow, and PyTorch).
- ✓ Enthusiastic about communicating complex concepts effectively.

Experience

- March 2022 - Present **Graduate researcher (current)** Oregon Health & Science University.
- ✓ Developed a first-of-its-kind explainable neural ODE digital twin framework in diabetes, using state space neural networks formally verified to be conformant with physiology, enabling accurate and personalized *in-silico* pre-clinical testing of diabetes technologies. Achieving and increase of the accuracy of 21% compared against mechanistic model ([↗ see GitHub](#)).
 - ✓ Analyzed an evidential neural network using explainable AI (SHAP) to study factors associated with increased risk of nocturnal hypoglycemia in type 1 diabetes.
 - ✓ Performed processing and statistical analysis of data collected during clinical studies and disseminated research results through two peer-reviewed journal articles (see [Google Scholar](#) [↗](#)) and presentations at top diabetes focused conference.
 - ✓ Mentored two high school interns in the lab in performing automated literature reviews and data analysis.
- April 2021 - Nov 2021 **Auxiliar control gestion** CNV construcciones.
- ✓ Developed an algorithm to automatically process emails describing construction tenders according to relevance.

Education

- 2022 – **Ph.D. C, Biomedical Engineering** 4.0/4.0 GPA
Oregon Health & Science University, Portland, USA
- 2015–2021 **B.Sc., Physics** 4.46/5.0 GPA
Universidad de Antioquia, Medellín, COL

Technical Skills

Technical specialties	Computational biology, data analysis, applied machine learning, signal processing
Programming and scripting	Python, C++, R, Bash
Data analysis and machine learning	Pandas, Tensorflow, Scikit-learn, pyTorch
Operating systems	Linux, macOS, Microsoft Windows.
Version control systems.	GIT
Languages	English (professional proficiency), Spanish (native)

Honors and Awards

- 2024 **Travel award**, National Institute of Diabetes and Digestive and Kidney Diseases.
Reviewer of the month, Journal of Medical Artificial Intelligence see [JMAI](#) [↗](#).
- 2023 **OHSU School of Medicine article of the month**, (see Mosquera-Lopez et al., Computers in Biology and Medicine, 2023) [↗](#).
- 2022 **WIS Professional developments scholarship**, Women in Science PDX see [WISPDx Blog](#) [↗](#).
- 2021 **Bachelor's thesis with honors**, Universidad de Antioquia.
- 2020 **Best advanced student in the physics program**, Universidad de Antioquia.
- 2017-2019 **Dean's list**, Universidad de Antioquia.