

Arturo Moncada-Torres

Biomedical Engineer & Data Scientist

Contact



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Experience

Sr. Researcher

[UMC Utrecht](#) (Utrecht, NL)

2024 – Today

Sr. Data Scientist

[Kite Pharma](#) (Hoofddorp, NL)

2022 – 2024

Clinical Data Scientist

[IKNL](#) (Eindhoven, NL)

2018 – 2022

Research Assistant

[ETH Zürich](#) (Zürich, CH)

2011 – 2013

Profile

- Driven by **improving people's health and well-being** through the practical implementation of transparent, innovative data-informed solutions.
- Efficient **interpersonal communication skills** leading to cross-functional collaborations with stakeholders of diverse multidisciplinary technical and non-technical backgrounds (e.g., scientists, clinicians, policy makers, engineers) across different teams, research groups, and institutions at a national and international level.
- Strong **scientific research, critical-thinking, and data analysis abilities** as evidenced by the **successful completion of numerous research studies** and the authorship of several peer-reviewed papers and research presentations, in **different fields of healthcare**.

<http://www.arturomoncadatorres.com/publications>

- Compared and evaluated the accuracy and performance of hematological analyzers for use in the development of clinical predictive models.
- Improved existing extract, transform, and load (ETL) pipelines through the implementation of standards, good coding practices, version control system, and software packages.
- Generated synthetic versions of cardiovascular clinical data to be used in algorithm prototyping while protecting patient confidentiality.
- Performed in-depth investigations using statistical + AI tools to generate insights, produce reports/dashboards, and give recommendations in the case of manufacturing deviations of immunotherapy for cancer patients.
- Designed and implemented automatic pipelines for the harmonized collection, storage, and consumption of said manufacturing time-series data adhering to FAIR principles (findable, accessible, interoperable, reusable).
- Developed software packages for data extraction, cleaning, and validation that were well-documented, user-friendly, and compliant with good manufacturing practice (GMP) that were used across sites within the company.
- Designed, developed, and implemented AI-based pipelines based on real-world observational data from the Dutch National Cancer Registry to [predict survival](#), improve treatment, and reduce the impact of cancer on patients.
- Developed and implemented [explainable AI models](#) that serve as support in transparent decision-making in a patient's care pathway.
- Led a team of five scientific programmers and data scientists that developed a platform for [federated learning](#), defining its [priorities and roadmap](#). As part of it, implemented [privacy-preserving algorithms](#) to predict patient outcomes and [improve treatment](#).
- Designed and implemented a formal methodology for [evaluating adherence to clinical practice guidelines](#) in real-life scenarios.
- Guided, managed, and supervised master's and PhD students.
- Implemented a machine learning pipeline for [classification of activities of daily life using wearable sensors](#)' data of healthy participants with an accuracy of >90% .
- Designed the experiment, collected, and analyzed inertial sensor data to [quantify white cane usage](#) to improve travel aids of visually impaired people.

Education

PhD in Biomedical Sciences

[KU Leuven](#) (Leuven, BE)
2014-2018

Focused on **Computational Auditory Neuroscience**

- *PhD Thesis*: Applied Physiological Modelling of Auditory Processes
Designed, developed, and implemented computational neural models of [speech understanding](#), [modulation detection](#), and [binaural hearing](#).
Collected and analyzed trial data of normal hearing, hearing impaired, and listeners with cochlear implants for model empirical validation.
(In collaboration with Danish Technical University, Denmark)
Marie Skłodowska-Curie scholarship for Early-Stage Researchers

MSc in Biomedical Engineering

[ETH Zürich](#) (Zürich, CH)
2012-2014

Major in **Wearable Technology & Biomedical Imaging (MRI)**

- *MSc Thesis*: MR Measurements of Dynamic Changes in Aortic Vessel Area and Pulse Wave Velocities Induced by Simulated Obstructive Sleep Apnoea
- *Semester Thesis*: Image Interpolation for Reconstruction of 4D MRI Data in the Presence of Respiratory Artifacts
(In collaboration with U. of Basel, Switzerland)

Excellence scholarship for Master’s studies. Graduated Cum Laude.

BSc in Biomedical Engineering

[U. Iberoamericana](#) (Mexico City, MX)
2007-2011

Major in **Biomedical Instrumentation**

- *BSc Thesis*: [Activity Classification in Healthy Subjects Using a Wearable Enhanced IMU](#)
(In collaboration with ETH Zürich, Switzerland)

Developed the hardware and signal processing algorithms for a home control system based on electrooculography. National Instruments University Challenge [first national prize](#).
Excellence scholarship for Bachelor’s studies. Graduated Magna Cum Laude.

Skills

Programming & informatics

Python

NumPy

Keras

Matplotlib

Seaborn

Bokeh

scikit-learn

pandas

Jupyter

SHAP

XGB

NeuroKit2

MATLAB

R

LabVIEW

SQL

Git(Hub)

LaTeX

MLOps

Languages

- Advanced: Spanish (native), English
- Intermediate: Dutch (studying), French
- Basic: German, Italian

Knowledge & special abilities

- Human anatomy + physiology
 - Predictive modelling
 - Survival analysis
 - Data visualization
 - Observational data analysis
 - Data collection & exp. design
- Keen and fast learner
 - Driven to action
 - Focused attention to detail
 - Out-of-the-box thinking
 - Interdisciplinary communication

Hobbies

- Rollerblading
- [LEGO building](#) (including [robotics](#))
- Volleyball (indoor)
- Pop and biomedical data science [projects](#)
- Gaming