

MARIA FRIZZARIN

DAIRY DATA ANALYST

mar.frizzarin@gmail.com

Kilworth, Co.Cork

0877616757

SUMMARY

Dairy scientist and data analyst with a passion for the dairy sector, from animal breeding, to milk transformation and dairy products commercialisation. A driven individual who enjoys new challenges and who has over four years of experience in handling complex data collected in dairy farms and during the milk transformation stage. Enjoys problem solving and learning new skills. Has previously lead groups of people.

RELEVANT EXPERIENCE

01/2023 – present **TEAGASC, IRELAND**

Postdoctoral researcher

- Experienced in collecting, cleaning, editing, mining, and analysing big data consisting of phenotyping and milk characteristics data. Skilled in the identification of anomalies within the data as well as the ability to incorporate quality-monitoring procedures to ensure data integrity.
- Skilled in the application and development of various statistical and predictive modeling techniques.
- Lead collaborators with industry stakeholders to identify potential areas of development.
- Built and developed statistical predictive models capable of estimating the individual cow methane emissions and nitrogen use efficiency from the milk the animal produced.
- Proven track records of excellent written and oral communication skills. Experienced in the communication of complex scientific development to a wide range of audiences, including: 1) industry stakeholders, 2) farmers and producers, 3) fellow scientists, 4) management.
- Organising the running of monthly online meetings with international speakers and international audience on milk quality and complex food data analysis.
- Lead a group of researchers for the organisation of a national webinar focused on delivering the results of different studies to industry stakeholders. Lead a group of researchers for the organisation of an international conference on milk chemistry and high-dimensional data analysis.
- Co-supervision of Ph.D. students.
- Reviewer of many manuscripts for peer-reviewed international journals.
- Development of a wide international network. Member of the ICAR (International Committee of Animal Recording) Feed&Gas group, of the European COST action project on European network of livestock phonemics (CA22112) and of the European sensorFINT project working on developing generic solutions to existing and emerging problems in non-invasive food process control building. Visiting professor at the University of Bologna, Italy.
- Expert in machine learning. Experience working using R, SAS, SQL, and linux languages as well as working in Putty and HPC environment.

09/2019 - 01/2023 **TEAGASC, IRELAND**

Ph.D. student

- Analysed and investigated the potential of using routinely collected and already available milk data coupled with machine learning techniques to estimate various milk and animal characteristics.
- Developed algorithms for four novel prediction models which uses milk data collected using the mid-infrared spectrometer to estimate: 1) milk technological traits, 2) milk proteins, 3) cow diet, and 4) cow energy status. The development of each algorithm involved rigorous testing and validation.
- Developed in-depth knowledge on milk chemistry and dairy products nutritional value.
- Lead investigator in one invention disclosure for the identification of cow diet using milk data.
- Improved skills in both written and oral communication. Presented research outcomes to various audiences ranging from farmers, industry stakeholders, secondary school students, to senior level scientists. Published in numerous international peer-reviewed scientific journals.
- Lead a group of researchers for the organisation of international conferences across three years with other 100 attendees either in person or online. Organised data competitions and lead the writing process of two manuscripts with the obtained results. The papers have been published in international scientific journals.
- Spent a period of the Ph.D. in Canada to collaborate with internationally recognised researchers to transfer algorithms developed for the Irish dairy system into the Canadian dairy system.
- Excellent time and project management skills. Completed the PhD 10 month prior the termination of funding.

OTHER EXPERIENCE

2017 - 2019

SECRETARY AT RETIREMENT HOUSE

- Two years' experience working part-time as secretary in a retirement house while attending university.

EDUCATION

2019-2023

UNIVERSITY COLLEGE DUBLIN, IRELAND

Ph.D. in mathematics and statistics

Ph.D. title: Statistical analysis of mid-infrared spectroscopy data to support dairy cow management

2017-2019

UNIVERSITY OF PADOVA, ITALY

Master in animal science

2014-2017

UNIVERSITY OF PADOVA, ITALY

Bachelor in animal science

AWARDS AND ACHIEVEMENTS

- Teagasc Walsh Scholar of the year finalist
- Leading an invention disclosure
- Paper in the list of the 100 most cited papers since 2021 for Journal of Dairy Science

SKILLS

- Excellent skills in Microsoft package
- Structured Query Language (SQL)
- Statistics and machine learning
- Leadership skills
- Excellent communication and writing skill
- Able to work in a team
- Great problem solving skill
- Flexibility and multi-task ability

PUBLICATIONS

- Predicting cow milk quality traits from routinely available milk spectra using statistical machine learning methods. Published in 2021. Journal of Dairy Science. <https://doi.org/10.3168/jds.2020-19576>
- Selecting milk spectra to develop equations to predict milk technological traits. Published in 2021. Foods. <https://doi.org/10.3390/foods10123084>
- Application of machine-learning methods to milk mid-infrared spectra for discrimination of cow milk from pasture or total mixed ration diets. Published in 2021. Journal of Dairy Science <https://doi.org/10.3168/jds.2021-20812>
- Mid infrared spectroscopy and milk quality traits: A data analysis competition at the “international workshop on spectroscopy and chemometrics 2021”. Published in 2021. Chemometrics and Intelligent Laboratory Systems. <https://doi.org/10.1016/j.chemolab.2021.104442>
- Estimation of body condition score change in dairy cows in a seasonal calving pasture-based system using routinely available milk mid-infrared spectra and machine learning techniques. Published in 2023. Journal of Dairy Science. <https://doi.org/10.3168/jds.2022-22394>
- Usefulness of mid-infrared spectroscopy as a tool to estimate body condition score change from milk samples in intensively-fed dairy cows. Published in 2023. Journal of dairy science. <https://doi.org/10.3168/jds.2023-23290>
- Classification of cow diet based on milk Mid Infrared Spectra: A data analysis competition at the “International Workshop on Spectroscopy and Chemometrics 2022”. Published in 2023. Chemometrics and Intelligent Laboratory Systems. <https://doi.org/10.1016/j.chemolab.2023.104755>
- Predicting methane emissions of individual grazing dairy cows from spectral analyses of their milk samples. Published in 2023. Journal of Dairy Science. <https://doi.org/10.3168/jds.2023-23577>
- Using milk mid-infrared spectroscopy to estimate cow-level nitrogen efficiency metrics. Under review process. Journal of dairy science.
- The composition and seasonal profile of Irish milk fat in the post quota era as determined by Mid-Infrared spectroscopy. Submitted. Journal of Dairy Technology.