Claudia MAZO

Institution: CeADAR (the Centre for Applied Data Analytics), University College Dublin
Academic Mentor: Dr Catherine Mooney
Commercial Partner: Oncomark Ltd
Commercial Mentor: Professor William M Gallagher

Claudia studied Systems Engineering at the University of Valle and has a double degree PhD. She has a doctorate in Engineering with an emphasis on Computer Science from the University of Valle; and a PhD in Production Engineering and Computing from the University of León.

Her thesis received a Cum Laude mention and an international mention from the University of León and a meritorious mention from the University of Valle. She has been awarded four scholarships to date.

She has presented at national and international conferences and been published in journals as the main author.

As an active member of the Multimedia and Computer Vision research group (MCV) at the University of Valle, she supervised two undergraduate students to complete their final year thesis. Currently, she co-supervise four PhD students in UCD and supervise an undergraduate student at the University of Valle. *See case study overleaf*

Dr Catherine Mooney
Dr Mooney is Assistant Professor in the School of Computer Science at UCD with over a decade of experience in machine learning; and more recent experience in predictive biomarkers. She was a also Research Fellow with the Royal College of Surgeons in Ireland, working to identify biomarkers of epilepsy and neonatal seizures. Dr Mooney work tackles challenges such as combining cutting-edge computational techniques (including machine learning) and biomedical techniques to efficiently integrate multiple data types into a single biomarker.

Professor William M Gallagher
Prof Gallagher is co-founder and Chief Scientific Officer of OncoMark. He is the Director of UCD Conway Institute of Biomolecular & Biomedical Research. He has received several awards for his research, including the BACR/AstraZeneca Young Scientist Frank Rose Award; the St Luke's Silver Medal Award; the NovaUCD 2011 Innovation Award and the inaugural Irish Association for Cancer Research Medal.

CeADAR (the Centre for Applied Data Analytics), UCD
CeADAR is a market-focussed technology centre for innovation and applied research in Big Data Analytics, Machine Learning and Artificial Intelligence. It is also the focal point of a thriving data analytics ecosystem delivering courses, seminars, conferences, consultancy and networking events.

Oncomark Ltd
OncoMark is an Irish molecular diagnostics company whose primary focus is the development of novel panels of cancer biomarkers, to reduce the over-prescription of aggressive therapies and to allow more tailored patient management.

Claudia's project

The OncoMasTR assay will help clinicians determine which patients should receive chemotherapy for early-stage breast cancer, offering superior performance over existing assays, which do not fully meet the clinical need.

The development of OncoEngine will be an integral part of the product development of the OncoMasTR test, integrating a complex algorithm and bioinformatical data, presenting test results through a graphical user interface (GUI) which the clinician will be able to access.

The second phase of this project will be to develop an enhanced model, OncoEngine+, which further stratifies early stage breast cancer patients. There are currently a number of pre-existing online tools; however, they do not integrate all the data available.

OncoEngine+ will combine datasets including pathological data, standard clinical data, environmental data and lifestyle risk-factors with the OncoMasTR score to provide more accurate stratification of breast cancer patients into multiple risk categories.

———