

Director's Message



Welcome to our first edition of MI-Labs News

It has been a wonderful start to the first year of the SFI Centre for Research Training in Machine Learning (ML-Labs) as we welcomed our first cohort of students.

I hope that you are all well and have had some rest since our recent Summer School. That event was a great opportunity to see all of the work that has been going on at our centre since our first PhD cohort started in October 2019. In just 9 months since then people have already made great progress in their research projects.

At the Summer School we saw fascinating presentations on projects looking at applications of machine learning in areas from improving water desalination plants to fixing potholes, and developments in fundamental machine learning approaches in areas from network analysis to computer vision. We also heard about all of the activities that people have been engaged in including successfully finishing modules, contributing towards the Covid-19 response, publishing papers, hiking, winning awards, sleeping, starting companies, and baking cakes. Most interesting of all for me were the reflections on the first 9 months of PhD life and the lessons that were shared on what has and (maybe even more importantly) hasn't worked - I made a lot of notes.

All of this is made even more impressive by the fact that 4 of these 9 months were under the extremely challenging conditions of the current Covid-19 scenario. As we prepare for our second PhD cohort to start in September, it is very reassuring to know that an excellent example has already been set for them. Thank you for that.

Mind yourselves.

Brian MacNamee

Student Successes

A very important part of being a PhD student in the CRT MI-Labs is attending conferences and taking part in public facing activities. Some of the highlights from the 1st year PhD students



Well done to Ciara Feely, UCD, who was invited to give a talk at the 28th International Conference on Case-Based Reasoning.

Sagar Saxena, TUD, attended the Human Centred AI Workshop for Covid-19 Research.



Sagar will also be on the organising committee for HWorkload Conference which has been rearranged and will take place at the University of Granada in Spain in December 2020.



A team including Agatha de Matthos, UCD, won a special prize at the Cork Copernicus Hackathon which took place in June 2020.

ML-Labs Cohort Events



Journal Club

takes place every three weeks on a Friday - students decide on a paper to present.

Our inaugural Journal Club started on Friday *22nd May* with the first presentation coming from James Fitzpatrick, student from UCD and his discussion paper was "The Unreasonable Effectiveness of Mathematics in the Natural Sciences". Next up on Friday *12th June* was Agatha De Matthos, student from UCD and her discussion paper was "A Survey on Trajectory Clustering Analysis". Next up was Xuehao Liu, student from TUD, who presented on *Friday 3rd July* and his discussion paper was *Grad-CAM: Visual Explanations from Deep Networks via Gradient-based Localization (ICCV 2017)*.

The next Journal Club will take place on *Friday 24th July* and the presenter will be Yasser Dahou Djilali from DCU.

1st Summer School June 2020

Our thanks to ML-Labs Summer School Committee 2020

Courtney Ford, Bahavathy Kathirgamanathan, Xumehao Liu, Phúc Lê Khắc Hồng, Na Li, Alan Cowap (From left-to-right)



Every year as part of the CRT in ML we will host a summer school in one of our partner institutions. This year because of the COVID 19 pandemic our summer school switched from being physically hosted in UCD to being hosted as a virtual summer school. The event was very successful, about 74 participants attended from all around the world including Ireland, USA, Spain and China.

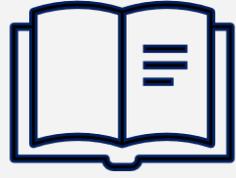
The summer school consisted of student presentations, keynote talks (**Dr Oisin Boydell & Dr David Monaghan**), a panel discussion about the experiences of entering industry versus academia (**Dr. Patricia Scanlon** from Soapbox Labs, **Dr. Edward Burgin** from Huawei, **Dr. Luca Longo** from TU Dublin, and PhD candidate **Senja Trinh** from TU Dublin.) a brainstorming event, and some social activities including a quiz.

News from our Supervisors

Artificial Intelligence (AI) for Societal Good Challenge SFI Future Innovator

Georgiana Ifrim, UCD. had funding success on the SFI Future Innovator Prize grant (AI4Good)

Gabriel Muntean from DCU has published a book Social, Legal, and Ethical Implications of IoT, Cloud, and Edge Computing Technologies - G. Cornetta, A. Touhafi and Gabriel-Miro Muntean



Susan McKeevar, TU Dublin, has published Queiroz A, Keegan B, McKeevar, S, "Moving Targets: Addressing Concept Drift in Supervised Models for Hacker Communication Detection" at CyberSA 2020 : IEEE International Conference on Cyber Situational Awareness, Data Analytics and Assessment, June 2020,

