Insight SFI Research Centre for Data Analytics

Alumni Stories

2023

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1. Insight Alumni reflect on their formative time spent as part of an inspiring and truly collaborative environment

When Insight was formed, 10 years ago, in 2013, as part of Science Foundations Ireland's Research Centres programme, the objective was to bring together the diverse expertise in data and AI that was developing independently at universities and research institutions across Ireland. Its architects hoped that collaborations could be fostered between the various nodes of research if all were plugged into a central entity, setting a series of shared AI challenges. The brief was broad; any discipline with the potential to contribute to or benefit from a data/AI dimension could find a home at the new national data research body.

Ten years on and Insight is the gravitational centre of an array of ground-breaking research fields in AI; drawing in disciplines ranging from physiotherapy to historical analysis to public health to robotics. Insight membership has grown to over 450, with members drawn from seven universities and research institutions, as well as collaborating researchers from Technological Universities.

As part of the celebrations marking our 10th birthday, we invited Insight alumni around the globe to tell us what Insight membership has meant for them. Their stories combine to reveal a decade of incredible change in data science and significant growth in Ireland's role in the sector. Insight has taken centre stage in that progression, as their experiences testify.

A consistent theme throughout the series is the value our alumni have gained from working in Insight's unusually heterogenous research environment. Data science and AI has the potential to transform every facet of society and the economy. The Insight SFI Research Centre has, from its outset, encouraged and welcomed researchers from any and all disciplines that stand to grow from immersion in data science.

Many of our alumni believe that Insight's growing profile in Ireland and beyond has helped them to advance their career vision and take them where they want to go – Ballincollig or Boston, machine learning or human computer interface.

There's plenty to learn from our talented pool of alumni and their testimonials are a credit to Insight's ongoing legacy.

1. David Azcona, Staff Applied Scientist, Etsy

David Azcona is originally from Pamplona, Spain. He completed his PhD under Prof Alan Smeaton's supervision in Machine Learning applied to Computer Science Education. He applied supervised approaches to help students that are falling behind in programming courses at Dublin City University's School of Computing. He predicted their performance based on their progress and recommended material and code snippets for their learning. Afterwards, as a postdoctoral researcher he worked on various projects from memorability, placing first at their annual workshop, to detecting knee injuries using MRI images and Computer Vision.

'I joined fashion online retailer Zalando as an Applied Scientist in 2020. I first started working on Personalisation by recommending brands to our customers that are relevant to their personal style by learning preferences and serving them to their millions of customers. Traffic in ecommerce generally follows a 80 – 20 rule, around 80% of the traffic goes to 20% of the content so these recommender systems are typically biased towards popular rankings. Brand recommendations are even more skewed, so I derived an approach with Prof Smeaton, to circumvent this problem and recommend new brands to interested users.

Afterwards, I joined Pricing and worked on matching products between Zalando's assortment and their competitors. We trained Machine Learning models using multimodal signals including images and text to generate candidates to be reviewed by human agents before applying discounts to our products.

'Recently, I joined Etsy, a global marketplace for buyers and sellers where you can find special items, from unique handcrafted pieces to vintage treasures. I work detecting content that violates our policies at scale in near real-time using Machine Learning.

'During my PhD, I had the opportunity to spend a year at Arizona State University as a Fulbright fellow researching how their large student body learn online and in person. This was possible thanks to Insight's connections and DCU's partnership with ASU. Over there, I also leveraged Machine Learning to detect wildfires before they become catastrophic with some friends at the Microsoft Imagine Cup, see here.

'The Insight Centre allowed me and other researchers to complete my PhD at the same time as other students at the school, university and other institutions in Ireland. This support network is crucial when you are going through this process as it allows you to ask questions, get feedback, attend and present at internal and external events and conferences. After my PhD, I came across many people, especially at Zalando, that have attended Insight as PhD researchers. Insight is a well-known and recognised institution that employers and interviewers recognise for their groundbreaking work in Machine Learning applied to many areas such as vision, lifelogging or healthcare.'

2. David Browne, R&D, Wave Break Media

After an early career in carpentry, David Browne returned to education aged 30 and completed a degree in physics at UCC. He then went on to complete a HDip in Data Science and Analytics at CIT, followed by a PhD in Deep Learning in UCC. His next step was a postdoctoral position in Insight, where he focused on data science and music, with a focus on deep learning and neural networks.

'After working with Insight, I went back into industry as part of a R&D team with Wave Brake Media in Ballincollig, one of the world's largest suppliers of media content for clients such as Adobe and Shutterstock. I have been R&D team leader now for two years, looking at the latest technology in deep learning and neural networks and how it can be applied to the media industry.

'Working in Insight under Dr Steven Prestwich is where I really started to gain a more complete knowledge of deep learning and how it might be applied in industry. I'm using that learning directly in my work now.'

3. Houssem Chatbri, Director of Data Science and AI, BNY Mellon Dublin

Houssem Chatbri leads a team of data scientists across global locations (Dublin, NYC, London, Pune) in close collaboration with the business to develop AI/ML models that focus on creating revenue growth opportunities, improving the client experience, increasing operational efficiency and ensuring regulatory compliance. Prior to his work in BNY Mellon, Houssem worked as a Postdoctoral Researcher and IRC Fellow at the Insight Centre for Data Analytics at DCU. Then, he moved to the industry and took different roles in areas including computer vision for various applications (e.g. security, video moderation), healthcare and health insurance, document digitalisation and understanding, and other areas of pattern recognition, image and video analytics. Houssem holds a PhD in computer science from the University of Tsukuba in Japan in 2016, and he was a visiting scientist to Rochester Institute of Technology (RIT) in New York US and to University of New England in Australia during 2014 and 2015.

'I joined Insight in March 2016 as a Postdoctoral Researcher and IRC Fellow and started working on a number of Irish and European projects in AI, including autonomous driving, hand gesture recognition and video analytics for content-based retrieval. I enjoyed working at Insight very much but kept being intrigued by the vibrant industry ecosystem in Ireland. I eventually left the centre in January 2018 to work at an AI start-up as a Data Scientist. Since then, I moved jobs a number of times as more opportunities came in until I landed my current job at the Bank of New York Mellon (BNY Mellon), which is the largest global Custodian and the oldest American bank.

'I started working at BNY Mellon as a Senior Data Scientist in 2020. Later, I was promoted to become the Manager of the EMEA Data Science team, and then a Director of Data Science and AI. Currently, I lead a team of Data Scientists to develop models for various business problems. Additionally, I lead a number of strategic initiatives to leverage opportunities in the ecosystem including university engagement, talent pipeline and AI community building. Recently, we established the Global AI R&D Hub in Dublin which will play a pivotal role in scaling our AI activities.

'My journey at Insight played a key role in making me ready for my industry jobs later on. It did so by giving me constant exposure to the industry which gave me time and leads to prepare, instilled values in me that increased my chances for success and enabled me to think strategically and proactively plan ahead.

'When I was at Insight, I had numerous opportunities to talk to many companies across project consortiums or other collaborations. This was available through weekly calls with various companies, visits to companies' offices or visits by company representatives to our lab and similar events that were held frequently. This gave me a chance to speak to future employers and colleagues and our conversations gave me a lot of insight that helped me prepare for industry roles, including emphasis on business impact and client experience, delivery in a fast-paced environment, strategy and planning, etc. I was also given a chance to contribute to a few short consulting projects through the Innovation Voucher program, under the supervision of Dr Suzanne Little and Prof Noel O'Connor, which allowed me to work on real industry pain points for start-ups that were trying to build commercial products.

'This level of exposure to the industry made Insight a great environment to prepare researchers like me for industry roles.

'On the other hand, I was extremely lucky to work along with senior colleagues such as Dr Suzanne Little, Dr Kevin McGuinness, Prof Noel O'Connor, Prof Alan Smeaton and others. By seeing them work, I learned a great deal about leadership and management, strategic positioning, the importance of effective communication, working with diverse teams and learning how to mentor junior colleagues.

'As I grew in my career, I constantly resorted to these values to solve different problems and continue moving forward. Insight provided a great environment to learn such skills from excellent and empathic leaders and opportunities to practice them without fear of failure or of being judged.

'Universities and research centres are known to provide a friendly environment and the best possible life-work balance and Insight was a great example of this privilege. This allowed me to have time to think strategically and be proactive in planning my career. Additionally, it made me able to engage with individuals who offered guidance and mentorship.

'This was one of the key benefits that I enjoyed at Insight, which is sometimes taken for granted, and it is something I always try to build in my team: The importance of allocating time for strategic thinking and career planning, which benefits both the individual and the team.

'Finally, another reason that made me enjoy being part of Insight is the time spent with great colleagues. I was inspired a lot by the way senior colleagues such as Dr Suzanne Little and Dr Kevin McGuinness carried their job with great dedication. Suzanne was a fantastic role model in leadership, empathy, always keen to bring opportunities to her team and elevate them to unlock their potential. I was also highly fortunate to meet colleagues including Dr Ricardo Simon Carbajo, Dr Aymen Ben Azouz, Dr Jogile Kuklyte, Dr Leonardo Gualano, and Dr Joseph Antony, who all became my friends until now, and who all went on and landed excellent R&D and industry careers.'

4. Cailbhe Doherty, Assistant Professor, UCD School of Public Health, Physiotherapy and Sports Science

Dr Cailbhe Doherty spent four years as an Insight member from 2015 to 2019. He is now Assistant Professor (Ad Astra Fellow) in UCD's School of Public Health, Physiotherapy and Sports Science. After completing a PhD in sports science, he joined Insight and completed post-doctoral research and a research fellowship.

'After completing my PhD which involved studying the biomechanics of injury, I wanted to move on to something more impactful. I had no real plans to do postdoctoral research, but I met Professor Brian Caulfield who told me about a project, it was an industry collaboration with Fujitsu, which was trying to monitor recovery post-concussion. – that was my introduction to Insight.

'It was a special time, there was a group of early-stage researchers – Martin O'Reilly and Darragh Whelan who are now better known as the team behind Output Sports, Alison Keogh, Rob Argent and others – it was this fantastic melting pot of researchers from different fields. We worked together, we played tag rugby together, it was a really inspiring, collaborative environment. You can't help but come up with ideas and ambitions in a group like that.

'Moving from a PhD to a post-doc was interesting. I had never had a problem publishing but securing funding was a whole other challenge. Brian gave me great guidance in that, but he also gave me the headspace to figure out exactly what I wanted to do.

'I collaborated on an application for an Enterprise Ireland Commercialisation Fund for what became the Pace-Man Project. Pace-Man used several terabytes of Strava data with the aim of helping runners to 'prepare for, predict and pace their race'. We worked with software developers and released an app which at its peak, was downloaded by nearly 5000 users. Because it was a commercialisation project, the focus was very much on solving a problem for the person on the street. Even though we didn't end up following through with it, two years of working in that mindset was really, really helpful.

'Later on (in separate work), I collaborated with computer scientists with expertise in machine learning and natural language processing to create a chatbot that would be able to search and synthesise research and produce an answer when healthcare workers asked it a question at the 'point of care'. We got an Enterprise Ireland grant for that one and we developed an app called Sci-Scanner for healthcare workers to use and were subsequently funded by the HRB to determine its utility to researchers. It was about three years too early – we could have put Chat GPT to good use! We did get a couple of papers from it though and it was a very useful project."

'So while I was working in Insight teaching was something I was very interested in but I suppose it ran parallel to my research work, it was adjacent to it I suppose. I had the opportunity to apply for a UCD Ad Astra Fellowship which gives researchers resources to pursue research and also to take on a teaching role. It's a competitive process but I was very happy to be awarded a place. That started in January 2020. Three months later of course, the Covid pandemic meant that we all needed to shift to remote teaching. I was still pursuing the Sci-Scanner research, visiting healthcare professionals in their workplaces and learning about their needs, and that stalled completely for obvious reasons. From a teaching perspective, I guess I wasn't the only one who was on a steep learning curve, so I took it as an opportunity to really lean into the teaching. I did a diploma in university teaching, and I did some upskilling in video editing.

'My work on Sci-Scanner had really demonstrated how the way information is packaged really determines how it's used and the impact it has. You can really capitalise on that in education and healthcare. I decided to create video lectures for students, and I soon found that manipulating the design of the videos can increase engagement. I've published some research around that, and I'm still engaging with wearable sensor research from my early days at Insight. I submitted a funding application with some people from that original Insight group – Alison Keogh and Rob Argent – we applied to SFI's Future Digital Challenge fund with the idea of working on a philanthropic digital platform for wearable data. The issue is that a huge number of people use wearable devices that are gathering data all the time, which could have huge potential for remote monitoring in healthcare, disease prediction or for the wide scale implementation of initiatives in public health, for example.

'The problem is that there's no centralised platform for this data, it's all in different silos depending on whether the wearable device is made by Apple, or Garmin or any other company.

'With Cerberus, we want to solve that problem by creating a 'databank' for wearable devices. The three 'heads' of the project involve 1) validation, to ensure accuracy of wearables; 2) synthesis, as in synthesis of research that has already been done around wearables (the old sciscanner work can be repurposed here); and 3) an open access data bank where people would choose to donate their data for research.

'We're getting a lot of interest but at the moment the job is to build the data bank and the feasibility of the idea.'

'So much of what I currently do stems from my time at Insight. As I mentioned the team, Rob, Alison and I, who are working on Cerberus met during our time at Insight. We're all working in different places but we're still collaborating on research.

'It adds to my teaching too. The work I did on the Pace-Man project, for example has been made into an elective module in UCD called 'Born to Run: The Science of Human Endurance'.

'The collaboration, the challenge, the people – my time at Insight has had a really positive impact on my career.'

5. Ciara Duignan, Consultant, Health and Government Industries

Ciara Duignan completed a BSc in physiotherapy in UCD. She worked as a full-time physiotherapist before returning to UCD to complete a research masters in wearable sensors. She then completed a PhD under Professor Brian Caulfield and continued to do postdoctoral work as part of Insight's Platform Research Initiative, Flourish. Dr Duignan worked on collaborations with the Technological University sector, working with the Gaelic Games associations to understand their data and technology landscape. She now works as a consultant in the health and government industries.

'I joined the Personal Sensing team in Insight in January 2016. Personal Sensing is an interdisciplinary team that brings together expertise from across life and clinical sciences and computer science and engineering. The team seeks to find ways to understand and measure human health and performance through the application of sensor and digital technologies. I joined as a Research Masters student with Brian Caulfield, working on an industry-funded project assessing walking and balance in older adults using wearable sensors.

'I continued to work part-time as a sports physiotherapist while doing the research, and I identified my PhD research question through my clinical work. I transferred from the Research Masters to a PhD, and the rest is history! Aside from completing my own PhD, my time in Insight gave me the opportunity to collaborate on industry funded projects from pharma to sport, work on EU funded projects and local community initiatives, and lecture and tutor on multiple programmes in UCD, as well as making friends for life.

'When I finished my PhD I continued in postdoctoral work in Insight, this time working on one of Insight's Platform Research Initiatives called Flourish, which aimed to support university student wellbeing through technology. The team developed multiple initiatives as part of this work, including new student wellbeing modules in UCD and DCU, and a mobile application to support students' personal development. I then moved on to one of our collaborations with the Technological University sector, working with the Gaelic Games associations to understand their data and technology landscape. If I was to sum up my Insight life in one word, it would be variety, which I loved.

'Since leaving Insight I have moved into the world of consulting, specifically consulting in the health and government industries in Ireland. I think many people don't understand what consultants actually do, but it's really just project-based specialist work. We provide specialist expertise to the health service and government bodies/agencies for work programmes that they need delivered, and it might vary from programme development and management to organisational and operational transformation projects, to technology implementation, and so on.

'Both my clinical and research backgrounds were fundamental in my getting the job, for the credibility and familiarity the clinical background provides when supporting work programmes in clinical environments, and the transferability of my research skills such as project management, critical thinking and problem solving, and communications and reporting. Aside from knowing it would be a good skills fit, consulting offered similar to variety to what I loved about Insight and provided the opportunity to have real-world impact in short timeframes. 'Aside from all the knowledge and skills that I built up through completing my PhD in Insight, the interdisciplinary and industry focused nature of the centre were its differentiators. The interdisciplinary and interconnected nature of the Personal Sensing team meant that I built up all the learnings from my own project and everyone else's projects at the same time, as well as being able to quickly crowdsource ideas and feedback on everything from overcoming practical challenges to publishing papers. This environment bolstered and accelerated the learning opportunities every day, in addition to preparing you for interdisciplinary team working in other sectors.

'The industry-focused nature of the centre meant we were simultaneously focused on creating new knowledge and opportunities and solving real-world problems. The opportunity to work with industry partners showed us how our research was applicable to different sectors and gave an insight into how those sectors worked – both of which were useful in identifying potential career paths.

It's difficult to overstate how Insight has benefited my career given that I can't separate myself from the skills and experience I gained – they are completely fundamental to how I think about and approach my work. I count myself lucky to be an alumni!'

6. Sonya Egan, Head of Breeding Innovation and Development at Horse Sport Ireland

Dr Sonja Egan is a 2019 Insight Alum. She is now Head of Breeding Innovation and Development at Horse Sport Ireland. She completed her PhD at University College Dublin in 2019, supported by the Irish Research Council's Government of Ireland Postgraduate Scholarship and the UCD Institute for Sport and Health.

'I have a pragmatic approach to my research and that has transferred to my current role, I see the benefit of research as applied, and that is something that was instilled during my time in Insight. My Supervisor, Assist. Prof. Denise McGrath is a funded investigator in Insight and was integral in securing funding for Insight 1 and now Insight 2. Prof. Brian Caulfield was on my Doctoral Studies Panel and helped me to leverage the knowledge and supports within Insight, improving the quality of my work.

'During my PhD at UCD I was awarded an interdisciplinary fund for my research. I actively collaborated across three schools in UCD (School of Public Health Physio and Sport Science, Veterinary and Engineering). It was here that I became an Insight member and an active participant in the weekly Friday weekly meetings. These meetings looked at specific research-applied problems and allowed me to question other research methods/plans/outputs but also learn from my peers who had a diverse range of expertise (anthropologists, data analysts, biostatisticians, engineers, sport scientists, physiotherapists – I'm probably safe enough in being the only horse expert so far!) These meetings really helped me to consider the wider implications of a research methodology, how to apply sensing tools and how to contextualise the bigger picture within my research. During my quantitative experimental work, I had access to 24 of Insight's inertial sensors, and used these to concurrently collect data from 8 horses over a 12-week period. This data set was further complemented by stable-based camera footage and a range equine biomarkers. This comprehensive dataset facilitated the simultaneous capturing and analysis of equine gait, behaviour, joint inflammation, and postural sway. The qualitative aspect of my research was industry stakeholder focused; how do they currently analyse equine gait, their awareness of supportive technologies and their perspectives on application.

'I did extensive collaborative work with other Insight members including Sean Drummond who supported the identification and implementation of method for equine sensor data cleaning, programming and segmentation in preparation for analysis; Cathy Goulding supported bespoke analysis coding to validate my data and analytics approach (equine postural sway – second paper to publish in this area and the first to use a sensor to do so) and Prof. Andrew Parnell who contributed a novel statistical analysis and the application of nonlinear analysis for my equine behavioural research.'

'I am the Head of Breeding, Innovation and Development at Horse Sport Ireland. I joined Horse Sports Ireland in 2019 (completing the last 6 month of my PhD part time) as a Breeding Policy executive. I took up the interim head role in Jan 2022 and full appointment in June.

'In this role I oversee all National Breeding Services (schemes, research, knowledge transfer and engagement activities) to the entire sport horse industry. Our current flagship project is the integration of equine genotyping during pedigree analysis. This will enable genomic based breeding decisions for Irish

breeders. Ireland will be the first country in the world to apply this technology across their sport horse herd.

'I oversee five Sport Horse Studbooks – passports (Irish Sport Horse, Irish Draught Horse, Irish Cob, Irish Part bred Cob and Irish Sport Pony) and their related activities (Equine Technical support funding list). I am also head of the Coaching and education Department which delivers a range of coaching and education programmes to the industry, from grassroots to high performance.

'Insight helped me to further develop my critical thinking skills. The research-application focus gave me an appreciation of the bigger picture and how to leverage this analytically in my decision making. I am also much better positioned to understand the needs of work-related funding applications, schemes, research projects, education pathways and so-on. It has also enabled me to seek out collaborators that can support these activities in my day-to-day role.'

7. Oonagh Giggins, Lead Researcher, NetwellCASALA

Oonagh Giggins graduated from UCD with a first class honours BSc degree in 2009. She completed an MSc through research in 2010 and completed a PhD evaluating the use of wearable sensors in rehabilitation exercise performance in 2014. Following the completion of her PhD Dr Giggins spent some time working clinically before returning to UCD in 2015 to take up her first post-doctoral role with the Personal Sensing group in Insight.

'During my time in Insight, I was awarded an SFI Industry Fellowship to undertake a research project with the Digital Solutions team in Novartis. I was seconded to work within their Global Service Centre in Dublin 2016 and completed a project there evaluating the utility and clinical validity of a range of connected health sensors for their use in healthcare and clinical trials.

'I took up a post-doctoral role in NetwellCASALA in Dundalk Institute of Technology in 2018. NetwellCASALA is a research centre and Living Lab where we design, develop, test and trial digital health and wellbeing solutions with and for older people, for longer and better living in the community. I lead the wearables for Human Performance theme within the centre and have been leading on a number of digital health assignments during my time in NetwellCASALA. Most recently I led on trial evaluating a digital health platform developed to support virtual cardiac rehabilitation. Another project I led on examined the impact of a circadian lighting intervention on nursing home residents. This project was shortlisted for the 2019 Irish Healthcare Centre Awards in the Best Use of Information Technology category. I have been successful in securing funding from the Higher Education Authority and enterprise for postgraduate research projects, and currently I supervise a number of graduate research students and early career researchers within NetwellCASALA

'My post-doc in Insight provided me with an excellent grounding for my career in academic research. It allowed me to develop independence and focus my research interests. I was afforded opportunities to develop new skills which I now use day-to-day in my current work. My post-doc in Insight also gave me the opportunity to collaborate and then work with a leading industry partner, which has been of huge value in my career to date.'

8. Alan Holland, Founder and CEO, Keelvar Systems

Alan Holland started a PhD in 2002 under the supervision of Prof Barry O'Sullivan. The Cork Constraint Computation Centre (4C) as it was known then was in its infancy and he was among one of the first PhD graduates in 2005. He conducted research at the intersection of Computer Science and Economics, looking at topics related to Algorithmic Mechanism Design and how to combine multiple objectives in large or complex auctions that involved expressive bidding and constraints on winner determination.

'My research was academically challenging and commercially relevant, so the work was particularly rewarding in that regard. I continued lecturing in UCC after graduating until late 2012 when I set up Keelvar and entered the startup world. With a small team and seed funding we embarked on the adventure that sought to bring advances in computing and intelligent systems to the arcane world of B2B procurement. It was challenging in the early years when we were evangelising new and more sophisticated approaches but it developed momentum and just over ten years later we have 115 staff. We work with customers such as Coca-Cola, Microsoft, Caterpillar, J&J and Novartis and help them manage $150bn in spend more efficiently each year.

'My period in research has given me the basis for establishing a unique product vision that has empowered our business. It has helped Keelvar by educating graduates and postgraduates on the intricacies of Optimisation and Machine Learning, key skills that are required in our domain. Our hub remains in Cork, and we continue to support interns and hire graduates from Insight. We feel lucky to have such a close connection to that research centre and feel there is a strong synergy between our business and the research and education conducted there.'

9. Mark Hughes, Director of AI, IdenTV

Mark Hughes completed a PhD in computer vision and ML at Insight, in the area of large-scale visual search technologies. He finished in 2010 and went on to work as a Postdoc researcher on several academic and industry collaboration projects before moving into industry.

'Since leaving academia, I have worked in various roles across the technology industry from early-stage companies to multinational technology companies. As my first foray into the commercial domain, I founded a visual search company while still at Insight which started off as an academic project. The leadership team at Insight strongly encourages this activity and it's a great opportunity for budding entrepreneurs with technical expertise to get a start. Together with a group of fellow Insight researchers, we spun this company out from the university and raised private funding to get it off the ground.

'In more recent years I was formerly a research scientist at IBM Watson, working on machine learning problems in the clinical domain. I also held roles as Director of AI at United Healthcare and led AI projects

at the US Department of Defence. In recent years I helped found a visual AI company based in the US and currently head up the AI team there.

The people and expertise available at insight provide an invaluable resource that gives a strong technical grounding to any aspiring researcher. The collaborative and interdisciplinary nature of Insight fosters a culture of knowledge sharing. You have the opportunity to work closely with fellow PhD candidates and researchers, engaging in discussion and benefiting from diverse perspectives. Furthermore, through industry collaborations, I gained exposure to real-world applications and industry best practices and this exposure provided the confidence and experience to jump into industry roles.'

10. Eoin Kenny, Postdoctoral Associate, Massachusetts Institute of Technology

Eoin Kenny was a Ph.D. at Insight from 2018-2022 and did his research on Explainable AI and Smart Agriculture with Mark Keane. He published nearly 20 papers, with many in top ranked conferences and journals worldwide. His team also lead the first VistaMilk collaboration with colleagues from Teagasc, work which went on to win an international best paper award. Currently, the team is still collaborating and in the final stages of publishing an updated version of this work in a top Agri Science journal.

'I am a researcher with a vision to make AI more transparent, trustworthy and ultimately elevate its usefulness. For my future career I am interested in using AI to help people in application critical domains, such as medicine, finance and autonomous driving. My Ph.D. at Insight gave the "foot in the door" necessary to get into this exciting area. It is almost impossible to go straight into such work (either in industry or academia) without a Ph.D., and Insight is (I believe) the ideal place to do this in Ireland currently.

'Indeed, it was this work at Insight that allowed me to get my current position as a postdoctoral associate at the Massachusetts Institute of Technology (MIT), which has only continued to help me realise my research vision. In my current position at MIT I have been fortunate to publish pioneering work on how to design interpretable autonomous vehicles which are driven by deep reinforcement learning. So, currently, with the help of MIT's recourses, I am continuing towards my previously mentioned vision to augment human AI interaction.'

11. Yuri Malitsky, Head of Enterprise Analytics, FactSet

Dr Yuri Malitsky is Head of Enterprise Analytics at FactSet in New York. He was an Insight member between 2012 and 2014.

'Between 2012 and 2014, I served as a PostDoc at Insight under the guidance of Barry O'Sullivan. During my tenure, I pursued my original research on Algorithm Selection and Configuration, with a focus on hyperparameter optimization. Additionally, I advised the projects of three Master's students and one PhD student while teaching machine learning classes.

'After leaving academia, I continued my research at IBM Research before transitioning to the finance sector, working with JPMorgan, Morgan Stanley, and ultimately leading a small analytics team at FactSet.

'My experience at Insight fostered a passion for creating interdisciplinary teams and engaging in teaching and mentorship. I continue to fulfill this passion by teaching part-time in the Online Data Science Masters program at the University of Virginia in addition to the mentoring I do at work.'

12. Deepak Mehta, Team Lead, Apple Operations International Ltd

'I develop simple solutions for complex problems and have gone through a transformative journey of shifting my focus from loving solutions to loving problems and ultimately managing problems effectively. This mindset has greatly influenced my approach to research and problem-solving.

'During my time as an Insight member, I had the opportunity to contribute to various research projects and gain valuable experience in the field of constraint programming and AI in general. My work primarily focused on network design and optimisation, data centre management and bioinformatics. I worked on several EU and Ireland funded research projects such as Globally Optimised Energy Efficient Data Centres (GENiC) and Distributed Core for unlimited bandwidth supply for all Users and Services (DISCUS). Additionally, I led a Ulysses Research Project that involved developing scalable combinatorial optimisation methods for discovering novel patterns in protein families. During my time at Insight, I also contributed to the advancement of constraint solvers' efficiency using machine learning techniques as part of the Future and Emerging Technologies Project ICON. My time at Insight nurtured my research skills and problem-solving abilities and deepened my understanding of AI technologies.

'Since my time at Insight, I have embarked on a rewarding career journey in the field of AI and optimisation, working with renowned organisations. I began my post-Insight career at United Technologies (now known as Raytheon Technologies) Research Centre in Cork, Ireland, where I held roles as a Staff Research Scientist and later as a Principal Research Scientist. At Raytheon, I led and contributed to multi-disciplinary projects

focused on aerospace design and manufacturing optimisation, as well as machine learning for cyber-physical systems.

'After my tenure at Raytheon, I had the opportunity to join Huawei Research Centre in Paris, France, for a short duration. During my time at Huawei, I applied my expertise to solve resource allocation problems in compiler optimisation, leveraging the features of next-generation processors.

'Currently, I am proud to be a part of Apple Operations International Limited in Cork, Ireland, where I lead a team of data scientists. In this role, I oversee the design, development, and deployment of AI-based solutions that optimise decision-making processes within logistics and supply chain operations.

'Insight was instrumental in shaping my career by providing invaluable skills, experiences, and resources. The opportunity to participate in many research projects and collaborate with experts across diverse domains and backgrounds has deepened my understanding of AI, machine learning, and constraint programming. Engaging with stakeholders in EU and national projects has sharpened my communication and interpersonal skills, enabling me to bridge the gap between research objectives and practical applications effectively. I have honed my ability to convey complex findings to both technical and non-technical audiences, ensuring their real-world relevance and impact. Overall, Insight provided me with a solid foundation and a launchpad for my career by fostering a culture of innovation, collaboration and continuous learning.'

13. Sameh Mohamed, Technical Manager, Carelon Global Solutions

Sameh Mohamed started out with an undergraduate degree in Computer Science from Helwan University Cairo , followed that up with a PhD in Insight at the University of Galway where he spent time designing and implementing expressive and efficient predictive models on knowledge graphs complete with applications in biochemical, molecular biology and medical domains. This year he will also complete an Msc in Interventional Cardiovascular Medicine. He is passionate about computer science theory and practice, working in research and development, with his main interest being in machine learning and bioinformatics. Sameh has extensive industry knowledge, having worked in data science for Mastercard and currently for Carelon Global Solutions where he is the Technical manager for data science and engineering.

'While at Insight in Galway I completed my PhD in conjunction with a collaborative research project between Insight, Fujitsu Laboratories Ltd. and Fujitsu Ireland, focusing on research and development in the area of knowledge discovery from both structured and unstructured data on the Web. Thereafter I was a research assistant and a post-doctoral researcher working on a European project to develop predictive and analytical models for monitoring health status and quality of life of patients after cancer treatment.

'Insight has had a profound impact on my career and research. Working with talented researchers from around the world in a collaborative and supportive environment has been inspiring. It has broadened my perspective and enabled me to engage in innovative and interdisciplinary projects. I'm grateful for the skills and insights gained during my time at Insight, shaping my work even after leaving.'

14. Eva Mohedano, Applied Scientist, Amazon

Eva Mohedano joined Insight to perform her Bachelor thesis in DCU in 2013 on Brain-Computer Interfaces under the supervision of Dr. Kevin Mcguinness and Dr. Noel O'Connor. She then completed a PhD in DCU in Content Based Image Retrieval. Dr Mohedana c0ompleted a further year of postdoctoral research before moving into industry.

'My time as an Insight member was supposed to be a short stay of six months, but I loved the experience so much that it became six years! Right after finishing my Bachelor thesis, I started my PhD with the same wonderful advisors. I worked on Content Based Image Retrieval and I learned a lot about Convolutional Neural Networks, Computer Vision and AI. During my last year I worked as a post-doctoral researcher on video understanding in a project for Huawei.

'In 2019, I decided to go back home to Barcelona and give a try in the industry world. I worked in Satellogic as a Data Scientist for three years, processing stunning satellite imagery and had the chance to "deploy" a lot of my learnings in Computer Vision and Deep Learning in this domain. Since last year, I've been working as an Applied Scientist at Amazon.

'I feel extremely grateful for my time at Insight; there I developed my curiosity in Machine Learning and had the chance to learn from extremely talented people in the area. At Insight, you are given the opportunity to work in some industry projects, which are a great preparation for the future. During my stay, I was also assigned to do some teaching hours, which I particularly enjoyed. My journey at Insight not only made me grow as a scientist, but also taught me to not be afraid of new challenges and to always keep the curiosity of learning new things.'

15. Dominic O'Connor, Assistant Professor, School of Health Sciences, University of Nottingham

Dominic O'Connor is originally from Scotland, and he completed his undergraduate (2010-2014) and postgraduate (2016-2017) studies in Dundee. He joined Insight in January 2017 as PhD researcher (MARIE SKŁODOWSKA-CURIE ACTIONS – European Industrial Doctorate (ITN)) following the completion of his MSc. His PhD research aimed to design, develop, implement and evaluate a neuromuscular electrical stimulation (NMES) training program in adult cancer survivors. He worked with Prof. Brian Caulfield who was his primary supervisor. As part of his PhD he spent 18 months in Dublin and the remaining time in Seville, Spain. He completed my PhD in December 2019.

'My daughter was born in August 2019, whilst I was completing my PhD. Although Seville could have been an option after my PhD, my lack of Spanish and the birth of my daughter (we wanted to be closer to family), made me look for postdoctoral positions in the UK and Ireland. Before completing my PhD studies I was offered two postdoctoral positions; one in Dublin at Trinity College with Professor Juliette Hussey's exercise

oncology group, and one at Queens University Belfast with Dr Gillian Prue as a postdoctoral fellow, funded by Pancreatic cancer UK. Although I loved my time in Dublin, and it remains fondly in my heart, Belfast was a more financially feasible choice with a young family and the research project excited me.

'I began my time in Belfast in January 2020, where I managed and delivered the PRECISE trial which aimed to establish the feasibility of delivering a prescribed, individualised supervised aerobic and resistance exercise programme during adjuvant therapy, to improve survival and reduce symptom burden in pancreatic cancer. However, shortly after starting the Covid-19 pandemic struck. This delayed the project until later in the year and recruitment did not open until October 2020. I remained in Belfast until April 2021 until I moved to Nottingham where I began a full-time permanent position in the School of Health Sciences as an Assistant Professor.

'To date I am still at the University of Nottingham, where I am Assistant Professor. My other roles within the school include Senior Tutor for Physiotherapy and Sport Rehabilitation and Deputy Director of Postgraduate Research where I am involved in the strategic development, maintenance and management of postgraduate education in the School.

'From a research perspective I am a co-investigator on a large NIHR funded project -Evaluation of PeRsOnalised PrEhabilitation in acute myeloid Leukaemia (PROPEL) (Award- £2,581,442.34). I am also involved in local research investigating the impact of prehabilitation exercise on cancer related health outcomes in a variety of cancer types.

'Being based in Insight as part of my PhD exposed me to a large number of different specialities. As part of this multidisciplinary team, this benefited my PhD research as it allowed me to look at the problems I faced through different lenses.

'I worked closely with other members of the CATCH team (3 other PhD students from the project were located in UCD), which allowed us to develop our projects in a synergistic manner. Being able to do this in person in the Insight office really benefitted the trajectory of my research and made the experience very enjoyable.

'However, the biggest benefit was being able to complete my PhD under the guidance of Brian, who instilled a particular work ethic in me which I still follow today. Work habits of PhD student can be unhealthy. However, the work ethic I picked up from Brian included focused work but with a clear work / life balance, something of which is still lacking in many academic institutions. I believe this is what made my PhD experience so enjoyable. For this I am extremely grateful to have spent time in Insight with Brian and all the other wonderful PhD and postdoctoral researchers he has working hard with him.'

16. Matt Patterson, Algorithm Developer, ActiGraph

Matt Patterson completed his PhD and Post-Doctoral work in 2015 with Prof Brian Caufield at Insight working on how wearable sensors can be used to obtain clinically useful information about a patient's walking / movement patterns. he was particularly interested in how cheap, easy-to-use sensors could be used out of the lab to provide high quality information from everyday life.

'After Insight I moved into working in industry at several different companies that use wearable technologies in their products. I currently work at ActiGraph, a top provider of wearable sensors to clinical researchers. At this role, I specialise in algorithm development for sleep analysis as well as cardio-respiratory metrics.

'At Insight I learned how to strategically think about a research project from a high-level view. I also learned how to collaborate with large teams of experts. Both skills have proven to be very useful in my career.'

17. Niki Pavlopoulou, Data Scientist, Gilead Sciences

Niki Pavlopoulou received her BSc in Computer Engineering and Informatics from the University of Patras, Greece, in 2013, where her thesis focused on the construction of a human protein-protein interaction network and detection of protein complexes using hybrid methods of Computational Intelligence. In 2014, she graduated from the University of Manchester, UK, with the MSc degree in Bioinformatics and Systems Biology, where she focused on building computational pipelines for extreme genome engineering and antifungal drug discovery. Afterwards, she worked as a data scientist in Big Data for Exonar Ltd and the University of Reading, UK, by working in text classification, conceptual search engines and topic extraction in distributed systems. In 2017, she joined the Insight SFI Research Centre for Data Analytics at the University of Galway, Ireland, as a PhD researcher. Her thesis involved entity summarisation for entity-centric Publish/Subscribe systems for the domains of Internet of Medical Things and Smart Cities. At the same time, she worked as a research assistant for the Horizon 2020 Big Data Value ecosystem project and performed some teaching for the MSc in Data Analytics. Currently, she is working as a data scientist at Gilead Sciences, where she is focusing on research and productization related to clinical trials for Oncology studies.

'Since my PhD at the Insight SFI Research Centre for Data Analytics, I am working as a data scientist at Gilead Sciences, which is one of the top biopharmaceutical companies in the world and has been placed as the number one place to work for in Ireland for 2023, according to LinkedIn. Gilead emphasises drug research, discovery, development and commercialisation for life-threatening diseases related to immunology, virology and oncology. I am based in the Dublin central site, where I am working towards applying the full lifecycle of Artificial Intelligence and Machine Learning models related to clinical trials in oncology by leading research projects and working with cross-functional teams including epidemiologists, clinicians/doctors, clinical operations, and stakeholders.'

'The Insight SFI Research Centre for Data Analytics is one of the top Centres of Excellence in Data Science in Ireland. I was lucky to have the opportunity to receive a PhD scholarship at Insight and I am grateful to my supervisor Prof. Edward Curry. Insight gives you the opportunity to form your own PhD thesis and direct it according to your own interests or current academic/industrial needs or trends. This is a skillset that is highly sought in any career path, especially in research roles, since it shows determination, discipline, and ability to formulate and complete loosely-scoped or difficult tasks. Insight pushes for excellence; therefore, the publication in top journals/conferences is an important factor that proves the work you have done and disseminates it to a wider community. In this way, you gain visibility and form connections with a broader academic and industrial network.

'During my PhD, I also had the opportunity to be involved in a Horizon 2020 European project and be responsible for deliverables, publications, presentations, organisation and chairing of events with multiple European academic and industrial partners. This generally goes beyond the usual PhD research path at Insight, so it was a great addition to my existing portfolio. It also helped me understand what were the current projects and focuses in industry so that I was able to make a more informed decision on where my future career should lie.

'At Insight, you also have the opportunity to be involved in teaching and volunteering, where I assisted in multiple conferences, as well as being a student representative for a year. These activities help you attend several events and meetings where you build a wider network and you boost a communications, listening, and organisational skillset that is needed in any future career. The Galway site, specifically, is located in a wonderful area by the lake, where many a walk can clear one's head and improve productivity. Therefore, I would encourage everyone to avail of all the opportunities Insight has to offer, especially, if it is out of one's comfort zone!'

18. Ian Wood, Senior Post Doc, Cyber Security Hub, Macquarie, Sydney

Ian Wood is a researcher in natural language processing (NLP) and AI with side interests in music, psychology and cyber security. At insight, he contributed to NLP aspects of emotion recognition for the H2020 project "Mixed Emotions" with Dr Paul Buitelaar.

'In the five years since leaving Insight I have continued in academia, with three postdoc positions: one at the Hong Kong University of Science and Technology and two at Macquarie University in Sydney. My current position as a senior postdoc with the Cyber Security Hub at Macquarie finds me applying conversational AI technology to "scamming the scammers".

'Insight deepened my knowledge of NLP, and in particular was where I first started to really delve into deep learning and AI. This has shaped my career since and led me to interesting and profoundly relevant research topics, for which I am grateful.'

19. Piyush Yadav, Research Scientist, Collins Aerospace

Dr. Piyush Yadav is a Staff Research Scientist in the Data Intelligence team at Collins Aerospace, Applied Research & Technology, Cork. Known for his exceptional leadership skills and talent in prototyping AI research products, Piyush brings over 10 years of research experience in industry and academia. He has authored over 50 peer-reviewed scientific articles, spanning patents, trade secrets, journals, book chapters, and international conferences. Before Collins Aerospace, Piyush worked as Senior Postdoctoral Fellow and PhD Researcher at the Insight Centre for Data Analytics at University of Galway. At Insight, he worked with Professor Edward Curry on distributed IoT event analytics for unstructured streaming data. He also worked with Lero- SFI Centre for Software and TCS Research and developed innovative AI-powered solutions for different industry clients. In addition to research, Dr. Yadav has been actively involved in teaching and mentoring roles in data analytics and research topics in AI. Dr. Yadav's expertise extends to IoT, Cloud-Edge AI, TinyML, graphs, data analytics, geospatial analysis, and privacy-preserving systems. His diverse background and current focus on developing real-world AI-based edge cloud intelligence solutions for the aerospace industry position him as a leading researcher in the field.

'After my tenure at the Insight SFI Research Centre for Data Analytics, I am now working as a Staff Research Scientist in Intelligent Systems group at Collins Aerospace, Applied Research and Technology in Cork, Ireland. In this role, I collaborate closely with senior leadership to shape future AI-driven projects for the aerospace industry. I am co-leading an AI-IoT-based Edge Intelligence Project, spearheading a collaborative effort to orchestrate AI, machine learning, federated learning and embedded TinyML processes for real-time IoT analytics. I have established an IoT testbed and am currently working on deploying edge technology in a real-world flight, applying AI techniques for prognostics and health monitoring. Additionally, I contribute to DARPA centre proposal reviewing, H2020 EU grant proposals, intellectual property activities, mentoring teams, and delivering guest lectures to upskill employees on the latest technologies in data analytics.

'In summary, my career at Collins Aerospace has been marked by significant achievements. I actively contribute to shaping the future of AI in the aerospace industry, leading collaborative projects, and applying cutting-edge technologies to real-world scenarios. Through my involvement in research, mentoring, intellectual property activities, and knowledge dissemination, I continue to make impactful contributions to the field of AI and data science.'

'The Insight Centre for Data Analytics has played a significant role in my personal and professional growth. Completing my Ph.D. and Postdoc here, the organisation has provided me with access to exceptional mentors, cutting-edge resources, and a vibrant research community. Their guidance and support have expanded my knowledge in data analytics and sharpened my research acumen, while the organisation's industry connections and collaborative projects have allowed me to apply my findings in practical scenarios and develop an entrepreneurial mindset.

'Moreover, the centre has facilitated interdisciplinary collaborations, exposing me to researchers from various domains and fostering a broader perspective on AI and data analytics. These experiences have not only enriched my research but also enhanced my interpersonal skills in communicating and collaborating effectively. Overall, the centre has played a pivotal role in my growth by nurturing my expertise in AI and data analytics, fostering industry collaboration, and emphasizing the importance of public outreach. I am immensely grateful for the opportunities and support provided by this exceptional organisation.'