National College of Ireland

NCI Research Day 4th edition

Friday 16th of June 2023

9:00 am – 12:50 pm

Executive 1

Agenda: NCI Research Day 2023

Friday 16th June 2023, Executive 1, National College of Ireland

09:00 – 09:05	**Welcome Introduction** Dr Arghir-Nicolae Moldovan (*School of Computing)*
09:05 – 09:15	**Welcome Speech** Professor Jimmy Hill *(Vice President Academic Affairs and Research)*
09:15 – 09:30	**Keynote: Bitcoin and its Energy Usage** Professor David Malone *(Department of Mathematics & Statistics, Maynooth University)*
09:30 – 09:45	**A Virtual Educational Robotics Coding Club Framework to Improve K-6 Students Emotional Engagement in STEM** Alexandra Alcala *(Early Learning Initiative)*
09:45 – 10:00	**Choreographing for Public Value in Digital Health** Dr Nicole Gross *(School of Business)*
10:00 – 10:15	**Knowledge, attitudes, and behaviours towards schizophrenia, bipolar disorder, and autism in Ireland: A population-representative study in 847 participants** Dr David Mothersill *(School of Business – Psychology)*
10:15 – 10:30	**Being truly my authentic self: American transgender students' experiences of navigating gender, identity, and personal growth while studying abroad** Dr Amanda Kracen *(School of Business – Psychology)*
10:30 – 10:45	**Just-in-time Interpretation of an Interpreter** Jonathan Lambert *(Norma Smurfit Library)*
10:45 – 11:00	**Developer Experience: Towards Improving Productivity through Human Factors** Dr Abdul Razzaq *(School of Computing)* (ONLINE)
11:00 – 11:15	*Coffee Break*
11:15 – 11:30	**Keynote: Patient and caregiver experiences of chronic illness: The role of modifiable factors** Assoc Prof Rebecca Maguire *(Department of Psychology, Maynooth University)*
11:30 – 11:45	**The ProBrain Lab: Research Overview** Dr Caoimhe Hannigan & Dr Michelle Kelly *(School of Business – Psychology)*
11:45 – 12:00	**Co-production of an early years person-centre care programme in the context of evolving funding opportunities, research, education, practice and policy at national and community level** Dr Josephine Bleach & Marion Byrne *(Early Learning Initiative)*
12:00 – 12:15	**Multiple View Texture Mapping: A Rendering Approach Designed for Driving Simulation** Dr William Clifford *(School of Computing)*
12:15 – 12:30	**Tracking the EURO STOXX 50®** (ONLINE) Dr Gaia Barone *(School of Business)*
12:30 – 12:45	**Patterns2KG: JAMS pipeline for modeling music patterns** Dr Abdul Shahid *(School of Computing)*
12:45 – 12:50	**Closing** Dr Arghir-Nicolae Moldovan

Speakers

Keynote Speaker: Prof David Malone
Department of Mathematics and Statistics, Maynooth University

Bitcoin and its Energy Usage

Abstract: Bitcoin, and the various other cryptocurrencies, have created quite a lot of excitement. One interesting aspect of these schemes to make the news is how much power is being used in order to maintain Bitcoin's blockchain, with estimates being similar to the electricity usage of countries! In this talk we'll explain what Bitcoin does, some of its components work and how to estimate the amount of energy being used to maintain the blockchain.

Biography: David Malone works in the Hamilton Institute and the Department of Mathematics and Statistics at Maynooth University. He does research usually involving some permutation of mathematics, computers and networking. He has worked on the performance of WiFi networks, measuring the performance of Internet infrastructure and various aspects of network security, passwords and guessability. On the side, he's been sysadmining since 1994.

Alexandra Alcala
Early Learning Initiative

A Virtual Educational Robotics Coding Club Framework to Improve K-6 Students Emotional Engagement in STEM

Abstract: Educational robots allow students to deepen their knowledge of mathematics and scientific concepts. Educational Robotic coding clubs provide a learning environment for K-6 students that promotes coding through STEM digital literacy. Students in educationally disadvantaged families may not have the educational and financial capital to engage in STEM learning. Closures of schools and afterschool services during the COVID-19 pandemic increased this digital divide. This research proposes a framework for delivering a virtual robotic coding club in an educationally disadvantaged community. The framework develops young people's emotional engagement in STEM through robotic coding. Synchronous online classes were delivered into family homes using Zoom. Results demonstrate that children achieved emotional engagement as reported through high levels of enjoyment and increased interest after participating in the programme. The research shows promise in increasing children's STEM skills and knowledge, and in improving positive attitudes towards STEM for children and parents.

Biography: Alexandra Alcala is originally from Colorado, USA, where she attended Metropolitan State University of Denver and graduated with a BSc in Business Marketing. She joined the Early Learning Initiative (ELI), National College of Ireland (NCI) in 2021 and has since worked across a variety of research projects. Her research interests include early years learning and development, and education and language support for immigrant children. A recent professional highlight was presenting on ELI's Parenting365 programme at last year's Collaborative Action Research Network Conference hosted by NCI.

Dr Nicole Gross
School of Business

Choreographing for Public Value in Digital Health?

Abstract: Entanglements between public and private entities in digital health are not new, but we still do not have full insight into how these public-private collaborations - or 'techno-tangoes; in short - are choreographed and by whom. More importantly, we ask about the purpose toward which these choreographies have been directed. Leaning on Mariana Mazzucato's work, we examine how the EU has acted as an 'entrepreneurial state' through successive EU policies over a thirty-year period in the area of digital health, but we question whether this has in fact led to a choreographing for public value. Public value and market value are often entangled, and the EU and its states have a difficult balance to strike: to preserve public health and deliver public value but also to foster economic progress, facilitate healthcare innovation, and support job creation. We trace the historic actions of EU policymakers and EU member states (647 documents over the course of 30 years) when it comes to the 'dance' between public health and market concerns in digital health. We show that this dance has been mainly choreographed around economic concerns, to a point where the public value side of the public/market value coin is now under serious threat. Will this choreography substantially change through the advent of the European Health Data Space, and (how) can a focus on public health value be re-established?

Biography: Nicole received her PhD in marketing from TUDublin in 2012 and between 2013 and 2017, she worked as a Postdoctoral Research Fellow in UCD (Applied Research Centre for Connected Health). Nicole has 15 years' experience from teaching in UCD, DCU, DIT and DBS, and has taught a wide variety of marketing, management and entrepreneurship-related modules in Ireland, Singapore and Hong Kong.

She is an active member of various research groups including European Group for Organizational Studies, Misfires (UCD) and the Entrepreneurship-as-practice community. She is also a regular reviewer for various ABS-ranked journals. Her research interests include high-tech marketing especially in healthcare markets, market making and market shaping, practice-research, business models and market innovation.

Her research has been published in Organization Studies, Organization, Business & Society, Marketing Theory, the Journal of Marketing Management and the International Journal of Entrepreneurial Behaviour & Research. Three case studies have also been published, including an Ivey Case.

Dr David Mothersill
School of Business – Psychology

Knowledge, attitudes, and behaviours towards schizophrenia, bipolar disorder, and autism in Ireland: A population-representative study in 847 participants

Abstract:
Introduction: Stigma towards people based on their mental health can lead to problems for those individuals in employment, access to accommodation and healthcare, and can worsen mental health itself. The Stigma and Mental Health Ireland Laboratory (SAMI) recently showed that knowledge, attitudes, and behaviours differed towards schizophrenia, bipolar disorder, and autism in a pilot study of 307 people in Ireland, with schizophrenia viewed most negatively. Better understanding of stigma in Ireland requires replication of these findings in a larger, population-representative sample.
Methods: 1,232 participants around Ireland completed a survey examining knowledge, attitudes, and behaviours towards schizophrenia, bipolar disorder, and autism, of which 847 completed necessary questions for analysis. Knowledge, attitudes, and behaviours with respect to these groups were compared using trimmed-mean analysis of variance (ANOVA).
Results: There was less knowledge about autism than either schizophrenia or bipolar disorder, and more negative perceived attitudes and intended behaviours towards schizophrenia than either bipolar disorder or autism, all reliably strong effects.
Discussion: Findings provide a partial replication of our pilot study and further evidence that mental health stigma differs towards different groups, particularly to the detriment of those with schizophrenia, suggesting future stigma-reduction programs should target stigmatising beliefs and attitudes towards specific groups.

Biography: Dr David Mothersill is Associate Professor in Psychology, Programme Director of the Psychology Full-Time Programme, and Co-Director of the Stigma and Mental Health Ireland Laboratory (SAMI) at National College of Ireland. David was awarded a PhD from Trinity College Dublin in 2014 and went on to lecture in the University of Galway, where he co-developed the successful MSc in Clinical Neuroscience in 2016. David's research uses neuroimaging and behavioural testing to better understand conditions such as schizophrenia. This research has led to 40 peer-reviewed papers published in the top scientific journals in the world, including Nature (impact factor 69.504), and over €100,000 in grant funding from the Irish Research Council, Royal Irish Academy, and ESTHER Ireland. David has presented this research at conferences around the world, including Kyoto, Japan, and Oxford University. David's first app, cTOM, a test to measure social cognition, was released on the Apple App Store last year.

Dr Amanda Kracen
School of Business – Psychology

Being truly my authentic self: American transgender students' experiences of navigating gender, identity, and personal growth while studying abroad

Abstract:
Introduction: Gender is a complex phenomenon that encompasses an internal experience of self and an expression of the gendered self to the world. Transgender and gender expansive (TGE) individuals have gender identities that do not align with their sex assigned at birth. As gender is socially constructed, experiences are highly influenced and complicated by sociocultural context, including when students study abroad.
Goals and Methods: Our research explores the study abroad experiences of 15 TGE undergraduates to better understand nuanced interactions among gender, identity, and culture. Consensual Qualitative Research (CQR), a methodology emphasizing consensus and bias minimization from the research team, was used to analyze interviews.
Results: Participants discussed making decisions about identity disclosure; feeling (in)visible, (dis)empowered, and (un)safe in their identities; and shifting identity salience based on their social context. They shared anticipating and experiencing harm related to their gender. Participants also described how they grew and thrived because of studying internationally.
Conclusions: This study contributes to the scarce research literature on TGE students' experiences in education, including during study abroad. Findings will enrich scholarly understandings of TGE lived experiences and inform recommendations for universities to enhance TGE access to safety, joy, community, and cultural enrichment during study abroad.

Biography: Dr (she/her) is an Associate Professor in Psychology at the National College of Ireland in Dublin, Ireland. She serves on the HSE's National Psycho-Oncology Advisory Group and coordinates the Irish Psycho-Social Oncology Network (IPSON), a multidisciplinary professional group dedicated to providing excellent, equitable cancer care in Ireland.
Amanda earned her undergraduate degree at Brown University and her doctoral degree in counselling psychology at Virginia Commonwealth University. She has worked as a clinician and researcher in psycho-oncology for the last 20 years. Previously, Amanda was on faculty at the Washington University School of Medicine and Webster University, where she also taught in the Women, Gender, and Sexuality Studies programme. Her research explores how people maintain wellbeing despite challenging circumstances and systems. Most of her research has focused on oncology professionals and cancer survivors; she has a secondary line of research that examines transgender and gender expansive students' experiences when studying abroad.

Jonathan Lambert
Norma Smurfit Library

Just-in-time Interpretation of an Interpreter

Abstract: The benefits associated with interpretive execution are well recognised; for example, interpreters are more adaptable, simpler, and portable than compilers; they have a compact code footprint, reduced hardware complexity, and reduced development costs. Also, they play an integral part in more recent execution models, such as the tiered execution methodology introduced within the Java runtime environment's (JRE) virtual machine. Nevertheless, the advantages of interpretive execution may become obscured when considering the execution time metric. With that said, critical contemporary questions remain unanswered, particularly regarding power consumption metrics. This talk addresses those questions through a multifaceted analysis of the power consumption behaviour of the JRE and its associated Java Virtual Machine (JVM). We model power consumption differences between JRE versions, toolchain compiler versions used in the building of the JRE, garbage collection strategies, workload type, and the effects of microarchitectural performance indicators on power consumption. In general, our findings place doubt in the "Update JVM, run the same application, realise improved performance" argument. A class of workloads exist for which interpretive execution provides better power consumption efficiency. Our findings revealed. Depending on model, that the variances in those predictors explain approximately 75% and 92% of the fluctuation in power consumption.

Biography: Jonathan’s time at the National College of Ireland has seen him head the development of the college’s Mathematics Development and Support Service. The primary goal of Jonathan’s work is the removal of mathematics as a barrier to progression, for our students, within third-level education. The support provided through Jonathan’s service is primarily around service mathematics, particularly mathematics relevant within the fields of Business and Computing. Jonathan’s research interests are in Computer Science, specifically regarding interpretive and just-in-time language execution. Jonathan’s most recent research has concentrated on modelling the multifaceted behaviour of the Java Runtime Environment (JRE) and its associated Java Virtual Machine (JVM). In that regard, Jonathan’s current work is focused on modelling the power consumption characteristics of interpretive execution relative to tiered just-in-time execution, considering factors such as build toolchain compiler effects, memory garbage collection efficiency, workload influences, and microarchitectural performance indicators. This work is of considerable contemporary importance and provides insights into reducing the energy consumption demands associated with modern computing infrastructure.

Dr Abdul Razzaq
School of Computing

Developer Experience: Towards Improving Productivity through Human Factors

Abstract: Developer eXperience (Dev-X) is a recent research area that focuses on developers perceptions, feelings, and values with respect to software development and software quality. Research suggests that factors and practices related to Dev-X can have a substantial impact on developer productivity (Dev-P). However, despite a large and diverse body of literature on factors that can impact Dev-P in general, there is no coherent and comprehensive characterisation of how Dev-X can be assessed and drive developer productivity. This presentation will cover the identified Dev-X factors and practices that may impact the developer productivity in Huawei setting. It will also present the common methods that can be employed towards assessment of Dev-X.

Biography: Abdul has exposure to teaching in well-renowned international universities across different countries including Ireland, China, and Pakistan. He is passionate about empirical research and development in diverse areas related to software maintenance, source code analysis, software metrics, Human-Computer Interaction (HCI), and computer science related applied research in health and well-being. In software engineering, he helped developers in software industry by providing automated support to build the tools and techniques around open-source software for software maintenance activities like architecture recovery, source code analysis, (VCS/ITS) repository mining, graph-based software visualization, information retrieval, feature/bug location, code parsing, separation of concerns, and model-driven engineering. As a result of this research, he developed several tools and published several research papers in prestigious journals (e.g., TSE, TOSEM, ESE, etc.) and well-renowned international conferences (e.g., ICSE, SCAM, etc.).
His software maintenance related research is not limited to develop the tools/techniques, rather I also assess the impact of code characteristics on software engineering techniques' behaviour. Towards this end, he designed code metrics that have moderation impact on different feature location techniques and published a TSE article out of this research. In developer experience related research, he is collaborating with Huawei Technologies to control their developer productivity with their well-being and improved experience rather than with organizational concerns where developers are considered as asset and not human.

Keynote Speaker: Assoc Prof Rebecca Maguire
Department of Psychology, Maynooth University

Patient and caregiver experiences of chronic illness: The role of modifiable factors

Abstract: The recently-released 2022 census data indicate that the number of people affected by disability and illness in Ireland is increasing. As living with a chronic illness can lead to a number of negative impacts for patients and their family members, there is a clear need for stakeholders to understand how to better support them. This talk will review some of our recent research that has explored this issue, focusing on the impact that a chronic illness can have on the wellbeing of patients, caregivers and family members. Research discussed will include systematic reviews, secondary data analyses from the European Quality of Life Survey, and primary data in the form of quantitative and qualitative studies in an Irish context which focus on people living with multiple sclerosis, cancer, and other illnesses. A core finding of our research is the role that modifiable psychosocial factors play in patient and caregiver wellbeing. This talk will argue for the importance of targeting such factors in the context of healthcare interventions.

Biography: Dr Rebecca Maguire is an Associate Professor in the Department of Psychology at Maynooth University. She holds a BA (Hons) in Psychology, as well as an MA and PhD in Cognitive Science from University College Dublin. Prior to taking up her position in Maynooth University, Rebecca worked as a Lecturer and Programme Director of Psychology at NCI (2012-2017). She has a number of research interests which span various disciplines, and has published over 50 journal articles in fields such as health, education, psychology, philosophy and computer science. Currently, Rebecca's primary research agenda focuses on the wellbeing of those affected by chronic illness. Over the last ten years, she has been involved in a number of projects examining the experiences of cancer survivors and informal caregivers, and has a particular interest in how cognitive appraisals and representations of health influence people's wellbeing. As a board member of MS Ireland, Rebecca also has a keen interest in exploring how best to enhance quality of life in people living with multiple sclerosis. She is a strong advocate of fostering PPI (Public and Patient Involvement) in research, while her role as Athena Swan chair in the Department of Psychology has strengthened her interest in promoting Equality, Diversity and Inclusion in research and Higher Education. Other interests include reasoning and decision making, surprise, creativity and student engagement.

Dr Caoimhe Hannigan and Dr Michelle Kelly
School of Business – Psychology

The ProBrain Lab: Research Overview

Abstract: The NCI Strategic Plan for 2022-2027 identifies research as one of six key priorities. In line with this, in the summer of 2022, psychology researchers at NCI established four research labs that sit under the research streams of Health Well-Being and Cognition, Teaching and Evaluation, and Attitudes and Behavioural Science. In this presentation, we will provide an overview of the research being conducted by the ProBrain Lab, under the stream of Health Well-Being and Cognition. Our research is currently focused on examining barriers to the provision of evidence-based interventions for people with dementia and on evaluating innovative approaches to intervention-delivery within dementia services. We will summarise our research progress to-date, and provide a brief overview of lab activities, grant funding, and research plans for the upcoming year.

Biographies:

Dr Caoimhe Hannigan completed her PhD in Psychology at Trinity College Dublin. Caoimhe has significant experience in the design and implementation of research related to cognitive function, loneliness, and health and well-being in older populations. Her key research interests include cognitive ageing, modifiable risk factors for chronic health conditions and dementia, loneliness and its impact on health, brain health and dementia prevention, successful ageing, and interventions to support health and well-being in older adults. Caoimhe has received over €200,000 in research funding and has over 30 peer-reviewed publications in the field of psychology of ageing. Caoimhe is co-director of the ProBrain Research Laboratory at National College of Ireland (ProBrain Lab | Psychology Research | NCI (ncirl.ie))

Dr Michelle Kelly is an Associate Professor of Psychology at NCI and co-director of the ProBrian Lab. She has an honours degree in Psychology and a doctorate in Behaviour Analysis and Therapy from Maynooth University. She is also a Board-Certified Behaviour Analyst - Doctoral level (BCBA-D) and an Internationally Accredited Cognitive Stimulation Therapy trainer (University College London). She is the Chair of the Psychological Society of Ireland's (PSI) Division of Behaviour Analysis and sits on the PSI undergraduate accreditation committee. Her research focuses on early interventions for people with dementia and relational frame theory. She is currently collaborating with the Alzheimer Society on an IRC funded project to examine barriers to the implementation of evidence-based interventions for dementia in Ireland.

Dr Josephine Bleach and Marion Byrne
Early Learning Initiative

Co-production of an early years person-centre care programme in the context of evolving funding opportunities, research, education, practice and policy at national and community level

Abstract: Based on the Community Mothers Programme, the 0-2 Years Home Visiting Programme has been developed and delivered collaboratively since 2015 in Dublin's inner city as part of NCI's Area Based Childhood (ABC) Programme Grant. A universal, prevention and early intervention programme, it has supported 500 parents to care for their own health and wellbeing and that of their children. Working closely with Public Health Nurses, it delivers key supports in relation to maternal and child diet, sleep, attachment, parenting and infant development. Participants reflect the diversity of the catchment area in terms of culture, accommodation, class, language, and ethnicity etc.
In 2019 the Community Mothers Programme was reviewed. Funding from Sláintecare Integration Fund and philanthropic donors led to the collaborative interagency development of an updated model, Community Families, which is replacing the 0-2 Programme. Aligned with key policy developments, including First 5: The Whole of Government Strategy for Babies, Young Children and Their Families (DCEDIY), Community Families deliberately puts parents and children first, empowering them through trusted relationships with their Home Visitor and the built-in flexibility to respond to all families and their unique needs and circumstances. A key aim is to empower families to develop confidence as they grow and build their local peer support networks, accessing supports and services within their local community.
This presentation explores co-production of an early years person-centre care programme in the context of evolving funding opportunities, research, education, practice and policy at national and community level.

Biographies:
Dr Josephine Bleach is the Director of the Early Learning Initiative, National College of Ireland since 2008. Josephine has a B. Ed degree (1980) from NUI; Masters of Studies in Education (2003) and a PhD in Education (2008) from Trinity College Dublin. She has many publications, including a book, Parental Involvement in Primary Education in Primary Education in Ireland. Her research interests are community development using Action Research; educational disadvantage; parental involvement in their children's development and education; professional development for educators; early learning, including literacy and numeracy; policy development and implementation.

Marion Byrne is the ABC 0-2 Senior Specialist with the Early Learning Initiative, National College of Ireland since 2015. Marion studied Nursery Nursing (1994) and Montessori teaching (1996) before completing NCI's (Honours) in Early Childhood Education and Care (2018), Certificate in Non-Profit Leadership and Management (2020) and Certificate in Leadership, Governance and Change Management in Early Childhood Home Visiting (2021). Through the Dublin Docklands and East Inner-City Area Based Childhood (ABC) Programme, Marion leads a team of Home Visitors to empower parents to be their child's first and best teacher and coordinates an Infant Mental Health Network. Through Marion's research and practice, she has enriched the home learning environment for vulnerable families across Ireland through the My Place to Play programme.

Dr William Clifford
School of Computing

Multiple View Texture Mapping: A Rendering Approach Designed for Driving Simulation

Abstract: Simulation of real environments has reached new heights in terms of photo-realism. Often, a team of graphical artists would have to be hired to compete with modern commercial simulators. Meanwhile, machine vision methods are currently being developed that attempt to automatically provide geometrically consistent and photo-realistic 3D models of real scenes. A road engineer wishing to simulate the environment of a real road for driving experiments could potentially use these tools. The challenge is how to best combine these technologies to host photo-realistic environments for experimentation. This presentation will highlight the research and development in machine vision and computer graphics to construct scenes used for a driving simulator. This simulator's rendering pipeline uses a combination of automatic 3D reconstruction tools, such as structure from motion, and computer graphics techniques, including projective texture mapping. The KITTI dataset was used to test the photo consistency metrics of the simulator. View synthesis techniques were compared using structured similarity index metric (SSIM). SSIM improved from 0.32 to 0.52 from baseline 3D reconstruction tools to the final solution using both 3D reconstruction and projective texture mapping. This framework offers a viable solution to hosting driving simulator experiments based on real roads for road safety engineers.

Biography: Dr William Clifford is a lecturer in the School of Computing at National College of Ireland. He received his PhD at Maynooth University, and his research specializes in machine vision and computer graphics. He has also published in the areas of human attention, eye tracking, and signal processing. He has been part of the school of computing for two years. He has taught modules in software development, software engineering, internet of things, advanced databases, data architecture, digital multimedia, algorithms, and advanced programming.

Dr Gaia Barone
School of Business

Tracking the EURO STOXX 50®

Abstract: More than €30 billion in assets under management are pegged to the EURO STOXX 50® Index, making it the most important European equity benchmark measured by assets. In this paper we replicate the EURO STOXX 50® Index on the basis of public information. After revising the methodological issues of value-weighted, equally-weighted and price-weighted indices, we estimate the free-floating shares on which the EURO STOXX 50® Index is based.
The paper concludes by reporting our tracking error.

Biography: Dr Gaia Barone is an Assistant Professor in Economics and Finance from the School of Business at National College of Ireland. She is Program Director for the M.Sc. in Finance. Her current research interest is on Credit Risk Models.
Before September 2018, Gaia Barone was an Assistant Professor in "Mathematical Methods for Economics", and Chair of "Financial Mathematics" and "Quantitative Methods for Management" at LUISS Guido Carli University of Rome.
She has been Research Fellow in "Structural Models for Credit Risk Management" (2013-4), Chair of "Advanced Financial Mathematics" (2014-7), Adjunct Professor of "Advanced Financial Mathematics" (2013-4), and Adjunct Professor of "Economics and Credit Institutions" (2012-3) at LUISS Guido Carli University of Rome.
She has also been a Teaching Assistant in Financial Mathematics at LUMSA University of Rome (2015-6) and at the European University of Rome (2010-6).
In July 2011 she received her Ph.D. in Money and Finance (final mark: outstanding) from "Tor Vergata" University of Rome, with a dissertation on "An Equity-Based Credit Risk Model" (Supervisor: Prof. Domenico Cuoco - Wharton).
In June 2009 she received her M.Sc. in Financial Mathematics (GPA 3.8 out of 4.0) from Stanford University, with a scholarship by LUISS Guido Carli (€ 25.000).
In July 2007 and July 2005, she received from LUISS Guido Carli University of Rome her M.Sc. in Economics and Finance (Summa Cum Laude with Special Mention, average mark 30.0/30 - 4 cum laude), with a thesis on "Arbitrages and Arrow-Debreu Prices" (Advisor: Prof. Gennaro Olivieri), and her BSc in Economics of Capital Markets and Financial Intermediaries (Summa Cum Laude, average mark 29.9/30 - 10 cum laude), with a thesis on "Arbitrages and Garman's Algebra" (Advisor: Prof. Gennaro Olivieri). In 2004-2005 she was an Erasmus student at Cass Business School, City University (London).
She was awarded three thesis prizes (the "Oddone Fantini" Prize in 2008, the "Marco Fanno" Prize in 2006, the "Assiom" Prize in 2006).
She has written two books on Arbitrages, has published in international journals of economics and finance (Journal of Credit Risk, Journal of Derivatives, Rivista di Politica Economica), and has contributed to a book on Derivatives − Securities Pricing and Modelling.

Dr Abdul Shahid
School of Computing

Patterns2KG: JAMS pipeline for modeling music patterns

Abstract: Musical patterns are crucial for many musicological tasks, such as genre classification, identifying common origins of pieces, and measuring similarities between tunes. Our previous research has defined several types of patterns in Irish traditional music and developed tools for extracting them from databases of musical scores. However, to gain further insights during music analysis and enhance musicians' understanding, pattern-related primitives need to be modeled. To answer these questions using semantic web technologies, we present a music pattern ontology based on the Music Annotation Pattern that represents annotations derived from different types of music sources. This ontology enables formalization of key concepts, flexible and efficient querying, open access and preservation, and integration with multiple data sources. We have developed a software pipeline to process existing data via the ontology to produce Knowledge Graph triples. To evaluate the ontology and KG, we collaborated with musicologists to define competency questions and SPARQL queries that provide evidence of the suitability of our modeling, allowing for deeper analysis to gain more insights.

Biography: Dr Abdul Shahid is a passionate researcher, academician, and software developer with expertise in computer science. He obtained his Ph.D. in computer science from the esteemed Capital University of Science and Technology in Islamabad, Pakistan. Dr Shahid recently joined School of Computing, National College of Ireland. Prior to this responsibility, he served at the University of Galway Ireland as a postdoctoral researcher on a Horizon2020 project.
Dr Shahid's research revolves around machine learning, semantic web technologies, natural language processing, and citation analysis. He has demonstrated his proficiency in these areas through publications in numerous renowned international journals. Beyond academia, Dr Shahid is an accomplished software developer with having wealthy of experience in developing various systems. With his exceptional combination of research prowess and hands-on software development skills, Dr Shahid continues to make significant contributions to the advancement of computer science and its practical applications.