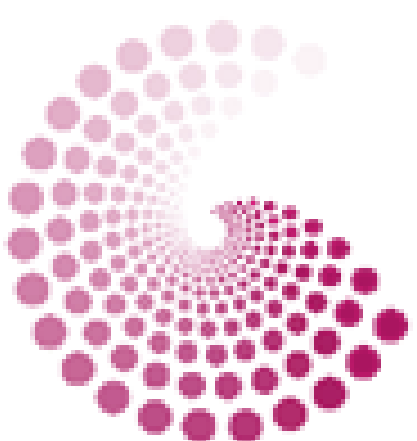


2nd IMA Congress: AI Unlocked: Innovation, Insight and Impact

Invited Speakers



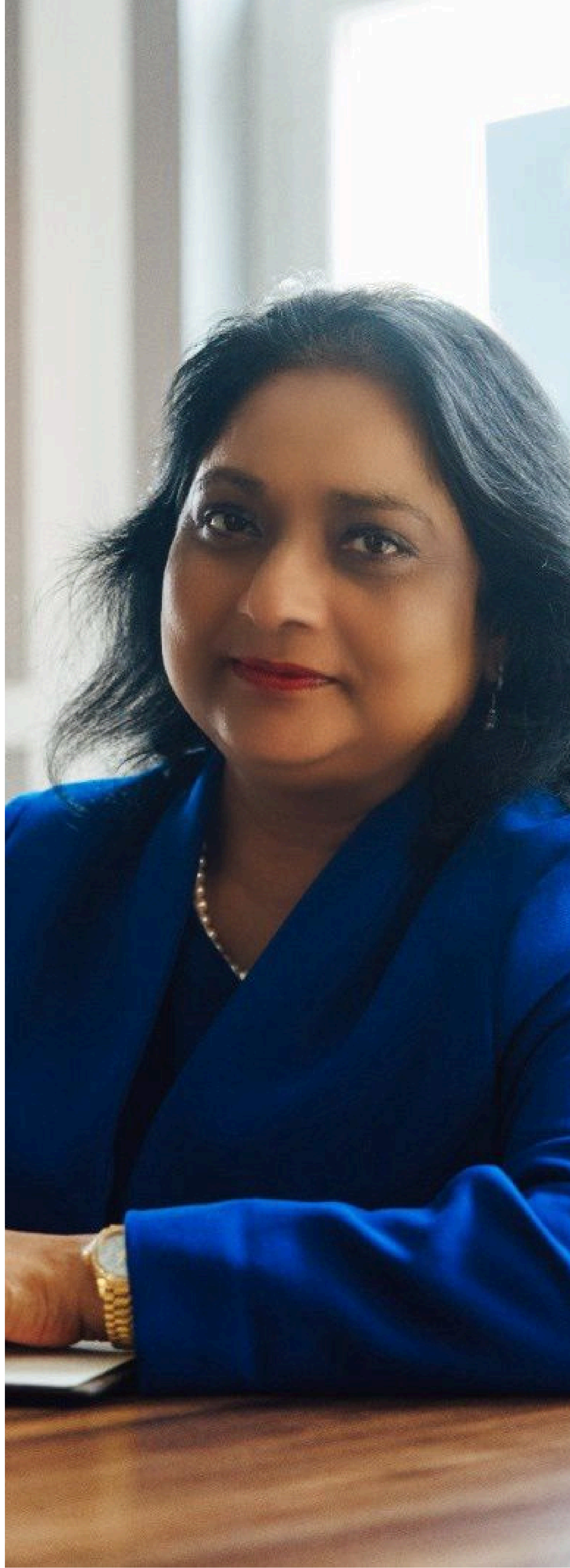
INSTITUTE OF
**MATHEMATICS &
ITS APPLICATIONS**

Dear Colleagues,

As Chair of the IMA AI/ML Congress, I welcome participants, speakers, contributors, and partners to a gathering defined by clarity of purpose: to reaffirm that the future of artificial intelligence rests on the rigour, transparency, and coherence of foundational mathematics. In a world where AI systems increasingly shape national infrastructure, global governance, and everyday life, mathematics is not an auxiliary discipline but the architecture that ensures these systems are robust, interpretable, and worthy of public trust.

This Congress brings together researchers, practitioners, and policymakers who share a commitment to building AI on principles that can be proved, audited, and governed, and it is this shared commitment that will continue to guide the evolution of safe, regulated, and mathematically grounded AI.

Dr Anjulika Salhan - CEO System Holdings & ITIXA





Dr Anjulika Salhan

CEO

System Holdings & ITIXA

Dr Anjulika Salhan, FIMA, CMath, CSci is Chair of the Institute of Mathematics and its Applications (IMA) AI Congress and one of the UK's leading figures in mathematically grounded artificial intelligence and regulatory technology. A mathematician, entrepreneur, and systems architect, she is the founder of ITIXA, an AI-native platform transforming tax compliance through formal mathematical structures, explainability, and regulatory alignment.

As the originator and Chair of the IMA Special Interest Group on Foundational Mathematics for AI, Dr Salhan has established the UK's first national forum dedicated to embedding rigorous mathematical principles at the heart of AI development. The initiative brings together academia, industry, regulators, and policymakers to advance a new generation of AI systems built on provable structure, auditability, and trust.

Her work sits at the intersection of mathematics, governance, and real-world deployment. In collaboration with the Knowledge Exchange Hub for Mathematical Sciences and the University of Bristol, she is advancing foundational methods for AI in financial and regulatory systems—ensuring that mathematical integrity is not an academic ideal but a practical standard for industry.

Through her leadership of the IMA AI Congress, Dr Salhan is championing a national shift: positioning mathematics as the essential infrastructure for trustworthy, transparent, and high-impact AI. Her vision is reshaping how the UK approaches AI readiness, moving from heuristic models to mathematically principled systems capable of meeting the demands of regulation, safety, and public trust.

Dr Jeremy Budd

Birmingham University.

I have been an Assistant Professor in Mathematics at the University of Birmingham since September 2024.

I completed my PhD in January 2022, at the Technische Universiteit Delft, under the supervision of Dr. Yves van Gennip and promotion of Prof. Johan Dubbeldam. I graduated PhD cum laude. My thesis was on “Theory and Applications of Differential Equation Methods for Graph-based Learning”. I have held postdoctoral positions at the Hausdorff Center for Mathematics, Universität Bonn and at the California Institute of Technology, under the supervision of Prof. Franca Hoffmann.

I received my Bachelor’s and Master’s degrees in mathematics from the University of Cambridge in 2017.

My research focuses on the intersection of applied analysis and data science, particularly image processing and machine learning. My specialism is in graph-based learning methods for image processing, e.g. for image segmentation and joint reconstruction-segmentation.





Mrs Sarah Coe Collyer Bristow

Sarah is a Partner in both our Corporate & Commercial and Intellectual Property (IP) teams, specialising in commercial, intellectual property, and technology law.

Her work covers the full range of contractual and digital issues relevant to businesses and entrepreneurs seeking to enter new markets or commercialise new technology/AI.

Sarah specialises in non-contentious commercial contracts, IP and IT transactions, with expertise in corporate M&A, joint ventures, and investment deals. She advises on privacy rights in agreements, royalty and commission structures, and handles licensing, IP assignments and Software as a Service (SaaS) agreements. She is experienced in the full range of commercial documents required in a new project including software, FinTech and platform development agreements having worked in the financial services sector.

Sarah is dual qualified in England & Wales, and in New Zealand. She joined the Linklaters London office from Baldwins, a NZ patent attorney firm. She has also worked in Norton Rose's London office and nationwide firm Clarke Willmott.

Prof Chris Budd OBE

University of Bath

Chris Budd OBE, is Professor of Applied Mathematics at the University of Bath, UK, and Director of Knowledge Exchange at the Bath Institute for Mathematical Innovation (IMI) which has a primary mission of taking mathematics out to the broader community. He has been involved in knowledge exchange all of his career, both in academia and industry. He has particular interests in mathematical, scientific computing, and scientific machine learning, and works closely with many industries, especially the environmental, electronic, power generating, and food industries. He is lead investigator for the large UKRI Maths for Deep Learning Project.

He was a founder member of V-KEMS which pioneered the use of virtual study groups (VSGs) as a very effective way of bringing mathematicians together to work on the challenges posed by COVID-19. He is on the Council for the IMA, chairing the IMA Special Interest Group on climate and sustainability, and is a Super-Champion for the UK Knowledge Exchange Network.

A passionate advocate for outreach in mathematics, Chris is also Professor of Mathematics at the Royal Institution and a fellow of Gresham College. His most recent book is *Climate, Chaos And Covid: How Mathematical Models Describe The Universe* (WSP).



Prof Nira Chamberlain OBE

AtkinsRéalis

Professor Nira Chamberlain is a multiple award-winning mathematician. Currently, he works as AtkinsRéalis Technical Fellow for Mathematical Modelling and is also a Visiting Professor at Loughborough University.

With over 30 years' experience of mathematical modelling, simulation, and developing algorithms that solve complex engineering and commercial problems, Nira was the President of the Institute of Mathematics and its Applications from 2020 to 2021 and the President of The Mathematical Association in 2023. Nira gained a PhD from Portsmouth University in 2014 and holds five honorary doctorates from various institutions.

In 2018, Nira was the winner of the Big Math Off title "World's Most Interesting Mathematician" and is the Founder of the Black Heroes of Mathematics Conference. Nira is a Fellow of the Institute of Mathematics and its Applications and was awarded an OBE for services to mathematical sciences in 2022.



Prof Stephen Lynch

Loughborough University



Stephen is a Professor of Digital Skills at Loughborough University and a National Teaching Fellow (NTF) with Advance HE. According to the scholarly analytics platform Scholar GPS, he is currently ranked #13 in the world for Dynamical Systems. Working with the IMA, he delivers one-day national workshops in the UK on “Python for A-Level Mathematics and Beyond.” He also delivers 5-day international workshops on “Python for Scientific Computing and TensorFlow for Artificial Intelligence.” He has run the workshops in China, Malaysia, Saudi Arabia, Singapore, and the USA. He is currently working on his eleventh book: “MATLAB for Scientific Computing and AI,” to be published by CRC Press at the end of 2026.

Dr. Richard Pinch

IMA Council Member and AI SIG

Richard is a retired civil servant, whose career has been divided between academic research in pure mathematics and its application to cybersecurity. He was the founding Deputy Director (head of research) at the Heilbronn Institute and has also served as Vice-President of the IMA, which recently elected him as Honorary Fellow.

He continues in mathematical research as a consultant. His interest in AI Ethics emerged from his work at the IMA.





Prof Marika Taylor

University College London

Marika Taylor is the Dean of UCL Mathematical & Physical Sciences. After completing her PhD with Stephen Hawking in Cambridge, she held research positions in Harvard and Utrecht Universities before joining the University of Amsterdam as an assistant professor. She later moved to the University of Southampton to found a new research centre bringing together mathematics and physics. She was Head of Mathematical Sciences at Southampton, before moving to Birmingham in 2023. Her research interests span theoretical physics, particularly gravity and quantum theory, as well as geometry and artificial intelligence.

Dr. Richard Lane

QinetiQ

Dr Richard Lane is a Principal Data Scientist and Chartered Engineer at QinetiQ with 24 years' experience in applying statistical and signal processing techniques to defence and security problems. Richard was awarded the John Benjamin Memorial Prize for his work on maritime anomaly detection and threat assessment, culminating in a demo to representatives from the Royal Navy, UK Border Agency, and Police Force. Richard has been the technical leader for many projects involving the development and use of statistical, time series, and behavioural analysis; tracking and data fusion; and object detection, machine learning, and artificial intelligence. Richard has written over 120 journal and conference papers, patents, and technical reports; is a senior editor of the Applied AI Letters journal; was chairman of the IMA Mathematics in Defence conference series for 4 years; and has given multiple keynote presentations. Richard was awarded a QinetiQ Fellowship in recognition of his research and project delivery record.





Prof Paul Roach

Loughborough University

Professor Paul Roach, PhD, FRSC, FHEA, is Professor of Biomaterials and Interface Science at Loughborough University. His research focuses on neural engineering, biomaterials, and surface science, with a particular emphasis on microfabrication and chemical surface design for brain-on-a-chip technologies. He has led pioneering work on biomaterials, neural guidance, and advanced biointerfaces, bridging chemistry, biology, and engineering to develop next-generation neurotechnologies. Professor Roach leads biological integration within the UKRI-funded UK Centre for Neuromorphic Computing and has held leadership roles in the UK Society for Biomaterials and the Royal Society of Chemistry's Biomaterials Chemistry Group.

Prof Carola Bibiane Schönlieb

University of Cambridge

Professor Schönlieb is Professor of Applied Mathematics at DAMTP and Head of the Cambridge Image Analysis group (CIA). She is also Director of the Cantab Capital Institute for the Mathematics of Information (CCIMI) and Director of the EPSRC Centre for Mathematical and Statistical Analysis of Multimodal Clinical Imaging (CMIH), a Fellow of Jesus College, Cambridge, and Co-Chair of the Cambridge Centre for Data-Driven Discovery (C2D3). She currently chairs the SIAM Activity Group on Imaging Sciences and the Applied Mathematics Committee of the European Mathematical Society (EMS).



Rachad Zaki

Director of Cambridge Mathematics

Rachad is the Director of Cambridge Mathematics (CM) and the founder and head of AIMED, the CM research and innovation hub focussed on artificial intelligence (AI) and mathematics education. His work involves leading the CM team in research, content development, designing new products and forging new partnerships, all to support policymakers and educators in the UK and internationally.

Rachad started his mathematics career in Paris at Pierre and Marie Curie University, now part of Sorbonne University. He then moved to the UAE where he was a founding faculty member of the mathematics department at Khalifa University, then the Head of Mathematics at the Ministry of Education, and an advisor to the Minister of State for Public Education at the Emirates Schools Establishment. He joined Cambridge in 2022.

After teaching for several years in Paris, Rachad served as Assistant Professor of Mathematics and then Associate Professor of Practice at Khalifa University where he also contributed to the development of the mathematics curricula for several undergraduate and graduate courses and degrees. He was later the lead in the development of a new mathematics curriculum for the public school system in the UAE, the lead in the design and implementation of mathematics assessments for all grade levels, and was a key contributor to various education projects focused mainly on curriculum, assessment and teacher development.

In addition to supervising multiple research projects, Rachad has published journal papers, book chapters and thought leadership pieces in the fields of mathematics, education, STEM, digital technologies and AI, as well as policy and the future of learning. He has been the recipient of several research grants as well as various awards in teaching, service and research. He has spoken at leading events around the world and is a member or fellow of a number of international societies and scientific organisations focused on mathematics, education, digital technologies and AI.





Akash Sharma

Royal Orthopaedic Hospital NHS Foundation Trust

Mr Akash Sharma is a Consultant Orthopaedic Knee Surgeon at the Royal Orthopaedic Hospital NHS Foundation Trust, Birmingham, specialising in robotic-assisted knee arthroplasty. He runs one of the UK's highest-volume robotic knee practices across multiple surgical platforms and is President of CAOS-UK. Regarded as a key opinion leader in robotic knee surgery both nationally and internationally, his clinical and research interests focus on precision arthroplasty, alternative alignment techniques and digital approaches to improving patient outcomes.