achieve | innovation

ARC: advancing the art of the possible

enzen

Delivering future-ready solutions

Enzen's Applied Research and Collaboration (ARC) team continually innovates in the fields of computer science and engineering to help solve critical energy and water challenges around the world.

With state-of-the-art research facilities in Bangalore, India, and Solihull, UK, ARC incubates and develops frameworks and solutions which integrate innovative technologies and platforms.

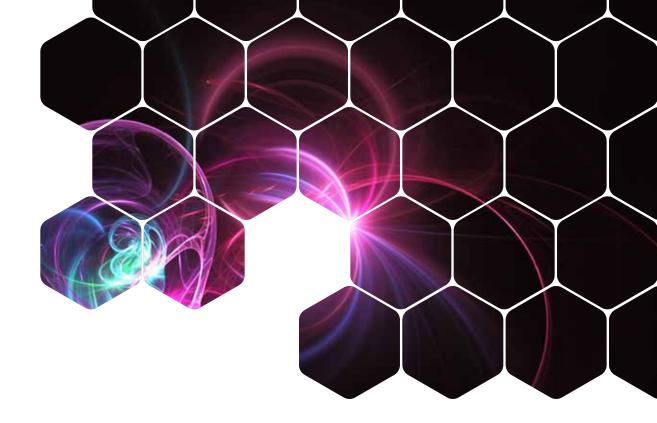Our global, multi-disciplinary teams use deep domain expertise and academic rigour to create disruptive models, smart solutions and new capabilities that can be practically applied. They also provide original, research-driven thought leadership, technical demonstrations and project consultancy for customers.

ARC works across future utilities, cities, mobility and Fourth Industrial Innovation. Its team members have in-depth knowledge and practical experience in:

- Artificial Intelligence (AI)
- Machine Learning
- Extended Reality: Virtual, Augmented and Mixed
- The Internet of Things (IoT)
- Blockchain
- Digital Twinning and Live Utility concepts
- Critical national infrastructure
- Advanced telecommunication infrastructure including 5G, LoRaWAN, Sigfox and low-energy IoT networks
- Smart Energy and Transactive Energy Systems
- Decentralised energy, trading markets and finance
- Smart City systems
- Geographic Information Systems
- Building Information Modelling

New insights into today's challenges

ARC provides the forward-thinking to address customers' needs, combining research and scientific thinking with the art of real-world doing.

Future Grids

Decarbonisation, decentralisation and digitalisation have increased the number of renewable energy sources, plus enabled growth in distributed generation, microgrids, energy storage, electric vehicles and prosumers who buy and sell their energy. ARC is at the forefront of understanding these exciting opportunities, developing smart grid technologies and solutions driven by IoT and AI that can improve quality of life.

Partnerships

ARC seeks out new ideas, solutions and possibilities by engaging with fellow organisations and sharing expertise. Our current partners are:

- University of Warwick, UK
- Warwick Business School Artificial Intelligence Network, UK
- Cambridge CleanTech, UK
- Energy Systems Catapult, UK
- The Alan Turing Institute, UK
- Fetch.ai
- Newcastle University, UK
- VITO, Belgium
- Smarter Grid Solutions, UK

Demonstrations

ARC showcases the following practical innovations at its laboratories:

- Virtual Reality (VR) immersive power infrastructure digital twins
- VR cave demonstration of a 3D electrical substation
- Stereo-image depth scanning and cognition
- Multi-agent Blockchain concept model
- AI Edge-based technology demonstrators
- Electric vehicle, smart transport simulation, planning and optimisation
- Transactive energy mixed vector optimisation, smart city and smart building spaces design.

Meet the ARC team

Dr Uma Rajarathnam,
Global Head of ARC
An energy and environment specialist with more than 25 years of experience across research, policy advocacy and clean energy.

Rahul Sharma,
Principal Consultant
A specialist in product development, electric vehicles, emissions reduction technologies and turning concepts into successful commercial products.

Dr. Amresh Kumar Singh,
Senior Consultant
A specialist in solar PV/wind grid interactive system design, adaptive control and power quality, and the electrical network optimisation of buildings.

Dr. Kannan Tinnium,
Associate Director
A specialist in electrical power technologies and applications, plus a senior member of the Institute of Electrical and Electronics Engineers.

Professor Mark Skilton,
Head of ARC UK
An international author, keynote speaker, government advisor and subject matter expert on Fourth Industrial Innovation, AI, cybersecurity, IoT, Blockchain and 5G.

Dr. Simon Crowle,
Senior Principal Technical
and R&D Consultant
An innovator and technical leader in the field of innovative interactive system design, specialising in distributed VR and AR environments.

Dr. Zafar Gilani,
Senior Principal Consultant
A technical specialist in Machine Learning, Deep Learning, data science and crypto-assets, and previously a Marie Curie-sponsored doctoral researcher at the University of Cambridge.

Dr. Yuchang Wang,
Senior Consultant
An AI R&D engineer with experience of decision-making techniques across smart charging, peer-to-peer trading, game theory, data mining and Machine Learning.

To find out more about how ARC can help you, contact:

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