Alliance formed to create new professional standards for data science

A new alliance has been formed to create industry-wide professional standards for data science. 'The Alliance for Data Science Professionals' is defining the standards needed to ensure an ethical and well-governed approach so the public, organisations and governments can have confidence in how their data is used.

While the skills of data scientists are increasingly in demand, there is currently no professional framework for those working in the field. These new industry-wide standards, which will be finalised by the Autumn, look to address current issues, such as data breaches, the misuse of data in modelling and bias in artificial intelligence. They can give people confidence that their data is being used ethically, stored safely and analysed robustly.

The Alliance members, who initially convened in July 2020, are the Royal Statistical Society (RSS), BCS, The Chartered Institute for IT, the Operational Research Society, the Institute of Mathematics and its Applications, The Alan Turing Institute and the National Physical Laboratory (NPL). They are supported by the Royal Academy of Engineering and the Royal Society.

Since convening, the Alliance has worked with volunteers and stakeholders to develop draft standards for individuals, standards for universities seeking accreditation of their courses and a certification process that will enable both individuals and education providers to gain recognition based on skills and knowledge within data science.

Governed by a memorandum of understanding, the Alliance is committed to:

• Defining the standards of professional competence and behaviour expected of people who work with data which impacts lives and livelihoods. These include data scientists, data engineers, data analysts and data stewards.

• Using an open-source process to maintain and update the standards.

• Delivering these standards as data science certifications offered by the Alliance members to their professional members, with processes to hold certified members accountable for their professional status in this area.

• Using these standards as criteria for Alliance members to accredit data science degrees, and data science modules of associated degrees, as contributing to certification.

• Creating a single searchable public register of certified data science professionals.

Stian Westlake, CEO of the Royal Statistical Society, said: "Data science can be a powerful tool for businesses and governments. But just like established fields like engineering or medicine, it needs good standards to ensure it is used wisely and well. The Alliance will play an important role in setting standards for those working in data science to help organisations make the most of cutting-edge new approaches, and so that we can all have confidence that our data is in good hands."

Paul Fletcher, CEO - BCS, The Chartered Institute for IT, said: "We are excited to be working with our alliance partners to define and manage standards in the burgeoning area of

data science. The pandemic period has further demonstrated that data science provides significant value in creating insight and improving decision making."

Matthew Forshaw, National Skills Lead at The Alan Turing Institute, said: "We are delighted to contribute to the valuable work of the Alliance, to ensure data science and AI training meets the needs of the current and future workforce. The Alliance's members are ideally positioned to address ambiguities around data skills definitions, ensure the consistent application of standards across industries, and maintain these standards to accurately represent emerging skills needs. The Alliance will play a significant role in establishing and upholding the professional values necessary to ensure ethical, fair and safe professional practices around data and AI."

Dr Peter Thompson FREng FIOP FRSC CEng, CEO of NPL, said: "We provide confidence in data from physical measurements as a leading National Laboratory and the UKs National Metrology Institute. Working alongside world leading Learned Societies is an excellent opportunity to support us in providing this confidence".

Notes to editors:

- The memorandum of understanding (signed on 23.07.21) can be found here: https://www.bcs.org/media/7536/alliance-data-science-mou.pdf
- In outline:
  - The Alliance is governed by a board with representatives from each of the Alliance members. It is chaired on an annual basis by one of the members and the initial chairperson is RSS Vice-president for Professional Affairs, Dr Rachel Hilliam.
  - The Alliance will implement processes to admit new members and retire members who wish to leave.
  - The Alliance agrees to share resources to implement the initial standards.
- The Royal Statistical Society (RSS), founded in 1834, is one of the world's most distinguished and renowned statistical societies. It is a learned society for statistics, a professional body for statisticians and a charity which promotes statistics, data and evidence for the public good. Today the RSS has around 10,000 members around the world. www.rss.org.uk @RoyalStatSoc
- BCS, The Chartered Institute for IT is here to make IT good for society. We promote wider social and economic progress through the advancement of information technology science and practice. We bring together industry, academics, practitioners and government to share knowledge, promote new thinking, inform the design of new curricula, shape public policy and inform the public. Our vision is to be a world-class organisation for IT. Our 65,000 strong membership includes practitioners, businesses, academics and students in the UK and internationally. We deliver a range of professional development tools for practitioners and employees. A leading IT qualification body, we offer a range of widely recognised qualifications.
- The Operational Research Society (ORS) is the home of the operational research and analytics community in the UK. It is a member-led organisation supporting professional operational researchers across industries and academia. We promote the understanding and use of operational research in all areas of life, including industry, business, government, health and education. The society is a registered charity which does everything from helping OR specialists push the boundaries of the discipline through publications and events to undertaking outreach work aimed at

helping everyone from business leaders to schoolchildren find out about the benefits of OR. With over 3,000 members from over 60 countries around the world, the OR Society is home to the science + art of problem solving. www.theorsociety.com

- The Royal Academy of Engineering is harnessing the power of engineering to build a sustainable society and an inclusive economy that works for everyone. In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation and building global partnerships, and influencing policy and engaging the public. Together we're working to tackle the greatest challenges of our age. www.raeng.org.uk

- NPL is the UK's National Metrology Institute, providing the measurement capability that underpins the UK's prosperity and quality of life. From new antibiotics to tackle resistance and more effective cancer treatments, to secure quantum communications and superfast 5G, technological advances must be built on a foundation of reliable measurement to succeed. Building on over a century's worth of expertise, our science, engineering and technology provides this foundation. We save lives, protect the environment and enable citizens to feel safe and secure, as well as support international trade and commercial innovation. As a national laboratory, our advice is always impartial and independent, meaning consumers, investors, policymakers and entrepreneurs can always rely on the work we do. Based in Teddington, south-west London, NPL employs over 600 scientists. NPL also has regional bases across the UK, including at the University of Surrey, the University of Strathclyde, the University of Cambridge and the University of Huddersfield's 3M Buckley Innovation Centre.

- The Royal Society is the science academy of the UK, which draws its Fellows from across the Commonwealth. The Society's fundamental purpose, as it has been since its foundation in 1660, is to recognise, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity. Follow the Royal Society on Twitter (@royalsociety) or on Facebook (facebook.com/theroyalsociety).

- The Institute of Mathematics and its Applications is the professional and learned society for mathematicians in the UK and exists to support and promote mathematics and its applications for the public good. It has over 5500 members, mainly professional mathematicians employed in business, industry, government, education and academia. As the chartered professional body for mathematics, it awards professional designations for mathematicians, mathematics teachers and mathematical scientists. www.ima.org.uk

- The Alan Turing Institute is the UK's national institute for data science and artificial intelligence. The Institute is named in honour of Alan Turing, whose pioneering work in theoretical and applied mathematics, engineering and computing is considered to have laid the foundations for modern-day data science and artificial intelligence. The Institute's goals are to undertake world-class research in data science and artificial intelligence, apply its research to real-world problems, driving economic impact and societal good, lead the training of a new generation of scientists, and shape the public conversation around data science and AI.