PROF. ALBERTO ARRIBAS HERRANZ

EDUCATION AND QUALIFICATIONS

2018 - 2019　**Diploma in Strategy and Innovation**
University of Oxford, Saïd Business School, UK.
Awarded Distinction.

1999 - 2002　**Ph.D. Physics**
Thesis: "Analysis of climate sensitivity of the Iberian Peninsula to perturbations of the vegetation land cover using a Regional Climate Model". Universidad Complutense de Madrid (Spain). Six month visiting researcher at Univ. of California San Diego (USA).

1992 - 1997　**B.Sc. Physics**
Universidad Complutense de Madrid (Spain).

WORK EXPERIENCE

2023 Sep - Present　　　**National Oceanography Centre - *Head Ocean Informatics***
Responsible for leading digital transformation at NOC. Specific responsibilities include provision of strategic advice to NOC Executive and leadership of Research Infrastructure, Research Software Engineering, and Artificial Intelligence teams.

2021 Jan - Present　　**European Environment Agency** - ***Scientific Committee member***
Responsible for strategic advice on Data Science, AI, and Cloud technologies to senior leadership to enable the delivery of the European Environment Agency's mission.

2021 Jan - Present　　**University of Reading** - ***Visiting Professor***
Co-design of novel MSc "Climate Change and Artificial Intelligence".

2021 Feb - 2023 May　　　**MICROSOFT - *Europe Lead, Sustainability Science***
Responsible for scientific leadership across globally-distributed teams to shape Microsoft's corporate sustainability commitments and strategies; enable the development of solutions with customers and partners; and advance the global climate and sustainability R&D agenda.

Specific responsibilities and achievements include:

· Provision of strategic scientific advice and in-depth analysis for Microsoft senior leadership (e.g. Chief Environmental Officer, President) on key issues (e.g. climate risk assessment, see Nature Comms Comment), research investments (e.g. Microsoft Climate Research Initiative, Climate Innovation Fund), and emerging science and technology for sustainability (e.g. 'AI for net zero').

· Design and co-leadership of Microsoft Sustainability Research Program, spanning over 30 scientists and engineers in Microsoft research labs and teams across America, Europe and Asia. Responsible for setting the strategy and ensuring the coordination of research activities in support of Microsoft's sustainability commitments.

· Design and co-leadership of Microsoft Climate Research Initiative, an international research collaboration with world-leading academic institutions (e.g. Berkeley, MIT, Tsinghua University, University of Reading) spanning over 50 researchers in nine projects and three programmes (data science for monitoring of GHG emissions; AI to accelerate scientific discovery of materials for GHG reduction and removal; and AI for climate risk and improved resilience) .

- Representation at key national and international bodies (European Environment Agency Scientific Committee, UK Research and Innovation Council), projects and international forums (UN AI for Good; COP) to advance sustainability strategy and contribute to the global research agenda in sustainability.

2018 - 2020 Dec   **University of Exeter - *Assoc. Professor in Computer Science***
- Theme Leader for Environment at Institute of Data Sciences and AI.
- Co-leader of "Environmental Intelligence", an UKRI-funded Centre for Doctoral Training on Artificial Intelligence for Environmental Sciences.
- Alan Turing Institute Fellow and co-I of "Data Science for Sustainable Development: Environment, Climate, and Health" project funded by Alan Turing Institute.

2015 - 2021 Jan   **Met Office** - ***Head Informatics Lab   &   Met Office Science Fellow***
- Founder and inaugural Head of Informatics Lab, reporting to Met Office Executive.
- Member of Met Office's senior leadership team ('Executive Technology Management Group'; 'Data Science Strategy Board') and responsible for strategic innovation and technology R&D for Met Office.
- Direct line management of 10-15 staff across Technology, Science, Administration and Design professions.

- Key highlights and achievements include:

  - Led the successful development of open-software, community-based, scalable platforms for Data Science (Pangeo, now a major international collaboration funded by USA National Science Foundation, and the foundation for Microsoft's Planetary Computer);

  - Led high-profile and innovative R&D on ML for forecasting (Deep Generative Models for Nowcasting - Nature) in partnership with Google's DeepMind.

  - Winner of UK IT Industry RITA 2017 "Best Innovation in Technology" award for the application of AI for decision-making in partnership with Amazon.

  - Successfully established and led key collaborations projects with academia (e.g. UCL, Oxford, Lancaster), industry (e.g. Amazon, Alibaba, Microsoft), Small and Medium Enterprises and start-ups (e.g. EU-funded Environmental Futures Impact Lab which supported over 100 companies) and government organisations (e.g. NASA, USA Dept. Defence).

  - Represented Met Office as reviewer and expert for EU Commission, UK Parliament, UK Research Natural Environment Research Council and other bodies.

2006 - 2014   **Met Office - *Manager Seasonal Forecasting***
- Responsible for end-to-end monthly-to-seasonal prediction systems, including: R&D, Research-to-Operations, and routine operational running in HPC.
- Member of Met Office 'HPC Operational Board', responsible for ensuring the optimal and robust utilisation of HPC for on-time delivery of Met Office predictions.
- Responsible for research and operational delivery of services and applications from monthly-to-seasonal predictions.
- Direct line management of 10-15 staff across in Science and Technology professions.

- Key highlights and achievements include:

  - Developed an innovative strategy and led the R&D and implementation of a new generation of near-term climate prediction systems, enabling the first-ever Skillful long-range prediction of European and North American winters.

  - Led the successful operational HPC running of monthly-to-seasonal prediction systems (and associated parallel and R&D suites) for a period of eight years. At the time these were the most complex operational predictions run by Met Office, using approximately 25% of Met Office's HPC resources.

- Successfully led the development of new monthly-to-seasonal services and products for water, transport, energy, and finance sectors.

- Represented and advanced Met Office's interests and strategies at World Meteorological Organisation and international projects, and on the use and implementation of seasonal prediction systems at South Korea, India, Australia.

2002 - 2006   **Met Office - *Senior Scientist***
- Research and development of first Met Office operational short-range ensemble prediction system for weather forecasting (MOGREPS).
- Responsible for the development of stochastic physics schemes to represent model uncertainties.

1998 - 1999   **Accenture** - ***Data Analyst*** (Spain and Venezuela)

PUBLICATIONS HIGHLIGHTS

H-index: 33 - Over 60 publications - Over 5,700 citations (Google Scholar)

AI for net-zero. Book chapter on 'AI for Science'. Edited by Geoffrey Fox, Alok Choudhury and Tony Hey. (2023). https://doi.org/10.1142/13123. Arribas, A. *et al.*

Climate risk assessment needs urgent improvement. *Nature Commun.* 13, 4326 (2022). https://doi.org/10.1038/s41467-022-31979-w. Arribas, A. *et al.*

Quantifying Teleconnection pathways using Causal Networks. *BAMS*, 102, 2247-2263 (2021). https://doi.org/10.1175/BAMS-D-20-0117.1. Kretschmer et al.

Skilful precipitation nowcasting using deep generative models of radar. *Nature*, 597, 672–677 (2021). https://doi.org/10.1038/s41586-021-03854-z. Ravuri, S. et al.

Skilful Long Range Prediction of European and North American Winters. *Geophys. Res. Lett.,* 41, 2514-2519 (2014) https://doi.org/10.1002/2014GL059637. Scaife et al.

The GloSea4 Ensemble Prediction System for Seasonal Forecasting. *Mon. Wea. Rev.,* 139, 1891-1910 (2011). https://doi.org/10.1175/2010MWR3615.1. Arribas et al.

PRESENTATIONS HIGHLIGHTS

- Invited speaker at multiple government, industry and academia events (e.g. COP26; UN AI for Good; DeepMind Summer School; GFDL Seminar Series; ECMWF ML Seminars; InnovateUK, AISummit, EGU, WMO, EMS).
- Lead Organiser of Graphical Web 2016 conference (sponsored by Google, Amazon, and Mozilla) and Exeter's LostWeekend Festival (over 6,000 attendees).

HONOURS HIGHLIGHTS

- Member of European Environment Agency Scientific Committee (2021 - present).
- Member of UKRI Steering Board for Digital Infrastructure (2021-present); member of Steering Committee for Digital Environment for UK National Environment Research Council (2019 - 2022).
- Expert advisor/reviewer for European Commission; UK Parliament Office for Science and Technology; USA Engineering Research and Development Centre.
- Award Winner UK IT Industry RITA 2017 "Best Innovation in Technology" for the application of AI for decision-making. Shortlisted "Best Innovation in Civil Service" Award 2016 for use data science in Public Sector.
- Associate Editor for the Quarterly Journal of the Royal Meteorological Society (2011-2015).

- Expert Member for World Meteorological Organisation (2011-2014) and the USA National Academy of Science on the Assessment of Intraseasonal to Interannual Climate Prediction and Predictability Committee (2009-2011).

INTERNATIONAL RESEARCH PROJECTS HIGHLIGHTS

- Environmental Futures and Impact Lab & Big Data Impact Lab (2018-2021): European Regional Development Fund — Role: Senior Management Board. Leading delivery across seven partners and supporting over 100 SMEs and start-ups to develop environmental solutions.
- SPECS & EUPORIAS (2012-2014): EU 7th Framework Programme for research, technological development and demonstration — Role: Leader monthly and seasonal area, and leader of UK applications of seasonal predictions work package until 2014.
- World Meteorological Organisation (2012-2014): Sub-seasonal-to-Seasonal Prediction Project involving 12 institutions across Asia, America, Europe, Australia and Africa.
  Role: Member steering committee for monthly-to-seasonal predictions until 2014.

ADDITIONAL INFORMATION

British and Spanish citizen.

As a parent of three mixed-raced children, diversity and inclusion are personally important to me.