

The Turing Way Nominations for OpenUK 2021 Awards

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- **Submission Date:** 28 June 2021, Shortlisted on 28 July 2021
- **Category:** Sustainability, <https://openuk.uk/nominations2021/>
- **Details:** Nominations are open for projects, organisations and companies using open source software, open data and/or open hardware to help achieve the objectives of any of the United Nations Sustainable Development Goals (SDGs). Submissions will be evaluated based on the following criteria:
 - *Impact:* measurable positive impact achieved by the initiative
 - *Diversity:* gender and ethnic diversity of the team involved in the initiative
 - *Replicability:* potential for replicability or scalability of the initiative's impact

Reproducible and ethical research is necessary to ensure that scientific work can be trusted. Funders and different stakeholders of scientific projects are beginning to require that publications and research outreach include access to the underlying data and analysis code. The goal is to ensure that all results can be independently verified and built upon in future work. This is sometimes easier said than done. Sharing data and code requires a common understanding of scientific concepts like open technology, data management, software development, collaboration and ethics: skills that are often not widely or practically taught. The Turing Way project aims to fill this gap in research and data science.

The Turing Way is an open-source project that involves and supports its diverse community to make data science reproducible, ethical, collaborative and inclusive for everyone. The goal is to provide all the information that researchers need at the start of their projects to ensure that they are easy to reproduce at the end.

The project is designed with the practices of sustainability in open technology and infrastructure at its core. We believe that to make our project widely beneficial and comprehensible we need to collaborate with individuals and groups with diverse skills, backgrounds, lived experiences and domain knowledge. Our community members currently include over 270 direct contributors on GitHub, as well as thousands of users worldwide who write, read, review, enhance and promote best practices in data science and research (in academia, industry, open communities

and public sector). The project is led by Kirstie Whitaker (lead of tools practices and systems at the Alan Turing Institute) and Malvika Sharan (Research Fellow and Community lead).

The Turing Way started as a book on reproducible research with a moonshot goal to 'make reproducibility too easy not to do'. Within a year, the project expanded to include best practices, recommendations and examples across five guides on Reproducible Research, Project Design, Communication, Collaboration and Ethical Research. We currently host about 200 subchapters on topics like open science, data management, research software, communication methods, remote collaboration, ethics and human rights.

The Turing Way is much more than a book: it is a 'community of practice' that promotes a culture of collaboration among global contributors with a diverse range of domain expertise. As a community-developed resource, the project belongs to the community and is always a work in progress. Using the open source framework, everyone can freely read, reuse, distribute, modify, and contribute back to the resources in the book. The project itself is built upon open source infrastructures such as Git, Jupiter Book and Netlify.

We avoid individual authorship in favour of establishing shared ownership and agency in the project. To represent different perspectives, it is important to us that the project integrates principles of inclusiveness in all its practices and is driven by the needs and wishes of the contributors. We involve diverse voices and acknowledge all contributions fairly. We understand that if we do not recognise all contributions, we will end up disproportionately ignoring the hidden labour that a lot of people do, and especially those who have historically been excluded from Open Source and tech spaces.

The project has been cited by 10+ peer-reviewed articles and impacted other research communities such as The Health Foundation, Library Carpentries, Open Research Handbooks at Reading and York universities, and more. Many open source projects closely collaborate with The Turing Way as well as build upon its open source governance. The project has also impacted projects of national interest such as UKRI Innovation Scholars, EU Reproducibility Report, An Emerging Technology Charter for London and data projects to manage ambulance demand for the NHS (see "Notable Projects").

To ensure that our community members can participate irrespective of their previous experience, we provide the resources, guidance, templates and training via our community handbook to help them stay involved in the community. The community handbook also provides documentation and technical details about the project allowing anyone to reuse its resources to build similar projects from scratch.

We believe that based on the overall goal and impact of this program, The Turing Way is qualified to be nominated for this award. We see a strong potential for the viability and long-term sustainability of this project and trust that this recognition will open new opportunities for future collaborations.

Relevant Links:

- Online Book (website): <https://the-turing-way.netlify.app/welcome>
- Project repository: <https://github.com/alan-turing-institute/the-turing-way>
- Twitter handle: <https://twitter.com/turingway>
- Impact story:
<https://www.turing.ac.uk/research/impact-stories/changing-culture-data-science>
- Other resources on Zenodo under CC-BY license:
<https://zenodo.org/communities/the-turing-way>
- YouTube channels with project resources and updates:
<https://www.youtube.com/channel/UCPDxZv5BMzAw0mPobCbMNuA>

Notable Projects (that build on or cite The Turing Way):

- An Emerging Technology Charter for London (Tasked by Mayor of London, 2020)
<https://www.london.gov.uk/publications/emerging-technology-charter-london>
- UK Government Analytical Community. Quality assurance of code for analysis and research. Office for National Statistics, Best Practice and Impact division:
<https://best-practice-and-impact.github.io/qa-of-code-guidance/>
- Data science boosts Trusts' ability to manage ambulance demand - PenARC. (2021) <https://arc-swp.nihr.ac.uk/news/data-science-ambulance-demand>
- A Citizen Science Guide for Research Libraries, From the LIBER Citizen Science Working Group. <https://github.com/CitSci-WG/guide>.
Turing Data Stories. Beavan, D., Rangel Smith, C., Van Stroud, S. and Xu K. Turing Data Stories. <https://github.com/alan-turing-institute/TuringDataStories>.
- FAIR Cookbook, <https://fairplus.github.io/the-fair-cookbook>, Rocca-Serra, P. (University of Oxford) Sansone, S. A., (University of Oxford) Splendiani, A., (Novartis) Giessman, R. (Bayer AG) and FAIRplus Consortium Members