The Alan Turing Institute

The Turing Way
Practitioners Hub

Programme Overview: March 2023

Malvika Sharan, Alexandra Araujo Alvarez

The Alan Turing Institute

UK's National Institute for Data Science and AI

- Advance world-class research and apply it to national and global challenges
- Build skills for the future
- Drive an informed public conversation

Challenges

Advance data science and artificial intelligence to…

Health

Environment & Sustainability

Defence and National Security

Open Tools, Practices and Systems

Research Engineering Group

Tools, Practices and Systems

– Trustworthy systems

– Transparent reporting

– Inclusive interoperable design

– Ethical integrity

– Respectful co-creation

– Leadership in open research

The Turing Way

Open source, open collaboration and community-driven handbook to reproducible, ethical and collaborative data science.

Partners and collaborating projects

Tools, Practices and Systems

Research communities at national & global scale

Bidirectional flow of knowledge, resources & evidence

Research outputs

Strategic and technical support

Open Infrastructure

Slide deck developed for The Turing Way Practitioners Hub Partners

The Turing Way: Book on Reproducibility

Kirstie Whitaker

Director: Tools,
Practices & Systems
Programme (TPS)

"We need to share the responsibility for open and reproducible science.
That along with good collaboration, communication and ethics should be seen as fundamental scientific methods."

The Turing Way is a lightly opinionated guide to reproducible data science.

Our 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.

This also means making sure PhD students, postdocs, PIs, and funding teams know which parts of the "responsibility of reproducibility" they can affect, and what they should do to nudge data science to being more efficient, effective, and understandable.
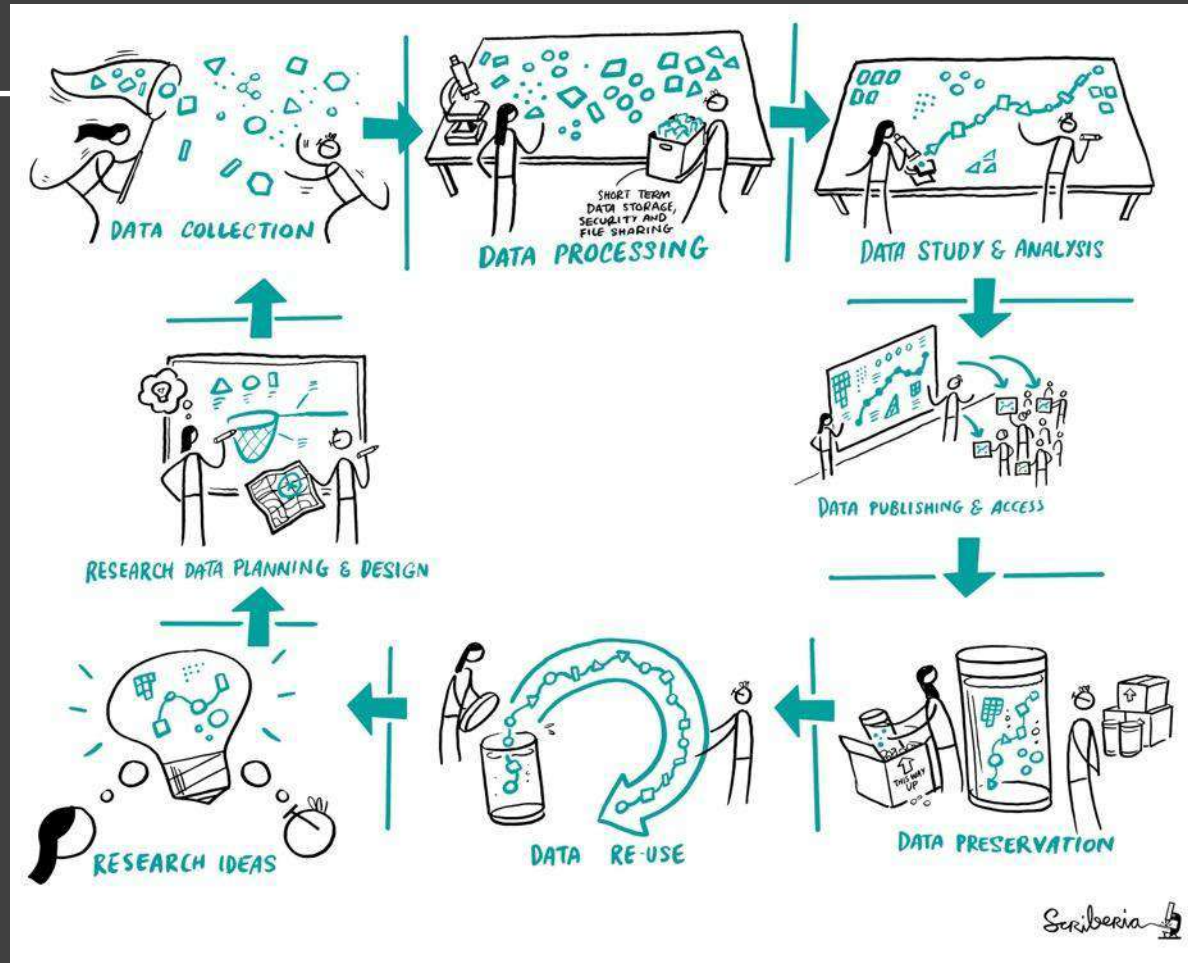
The Turing Way

An Open Source guide on Data Science.

*We involve and supports a **diverse community** to make research **reproducible, ethical, open and inclusive** for everyone.*

Reproducibility

		Data	
		Same	Different
Analysis	Same	Reproducible	Replicable
	Different	Robust	Generalisable

Fig. 3 *The Turing Way* project illustration by Scriberia. Used under a CC-BY 4.0 licence. DOI: 10.5281/zenodo.3332807.

The Turing Way: Guides on Data Science

Kirstie Whitaker
Director: Tools, Practices & Systems Programme (TPS)

Malvika Sharan
TPS Senior Researcher: Open Research & Community

Anne Lee Steele
Community Manager, The Turing Way

The Turing Way

all contributors 429

Welcome

Guide for Reproducible Research ⌄

Guide for Project Design ⌄

Guide for Communication ⌄

Guide for Collaboration ⌄

Guide for Ethical Research ⌄

Community Handbook ⌄

Afterword ⌄

The Turing Way Guides
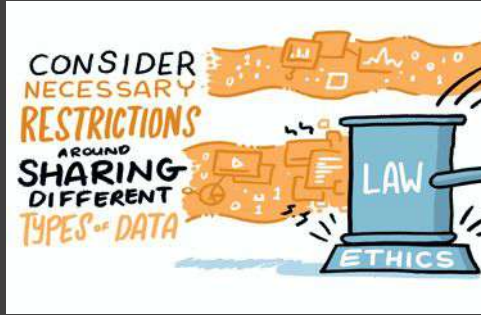

Reproducibility

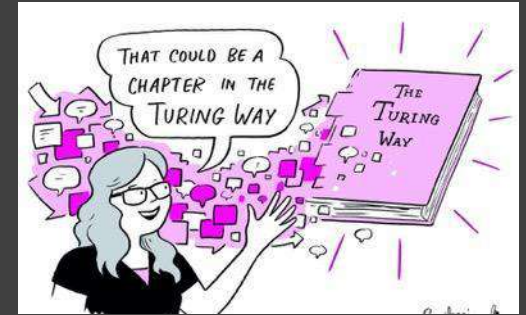*Project Design*

Communication

Collaboration
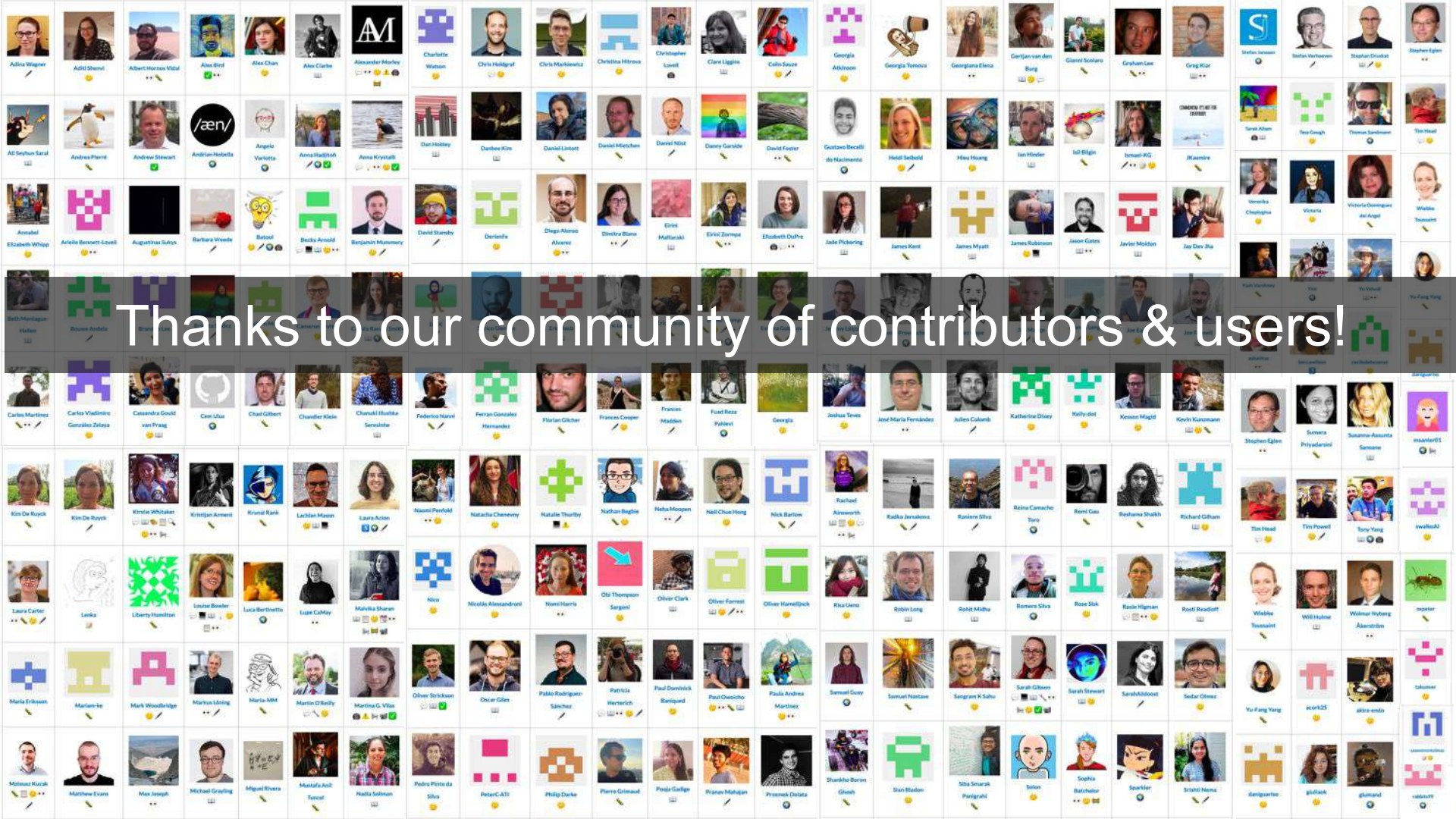

Ethical Research

Community Handbook

Thanks to our community of contributors & users!

Project Growth & Recognitions

- 4+ years, >260 Chapters, community resources

- 425+ contributors, 3500+ monthly users - supported by 20+ core members (governance)

- 2 awards and engagement with 25+ organisations

- Replication/extension by 3 Turing & 6+ external projects (e.g. ONS, UCL, Uni Oxford, LIBER: Association of European Research Libraries)

@malvikasharan, https://star-history.t9t.io/#alan-turing-institute/the-turing-way, Presentation: https://zenodo.org/record/7716933

Qualitative/notable impacts

Resources are being used by learners, educators, community builders, policy makers and researchers globally

- NASA - Transform to Open Science - 5 years Mission for capacity building

- Recommended in Goldacre Review for modern open working into health data

- NASA OpenCore, CodeRefinary, Library Carpentries training materials

- Reproducibility of scientific results in the EU 2020 report

- An Emerging Technology Charter by Mayor of London (2021 policy)

- Innovation Scholars: UKRI grant 2020 (funding call)

- Cited by 40+ peer-reviewed articles & 100+ online publications

Book:
the-turing-way.netlify.app/

GitHub:
github.com/alan-turing-institute/the-turing-way

Twitter:
twitter.com/turingway

Email:
theturingway@gmail.com
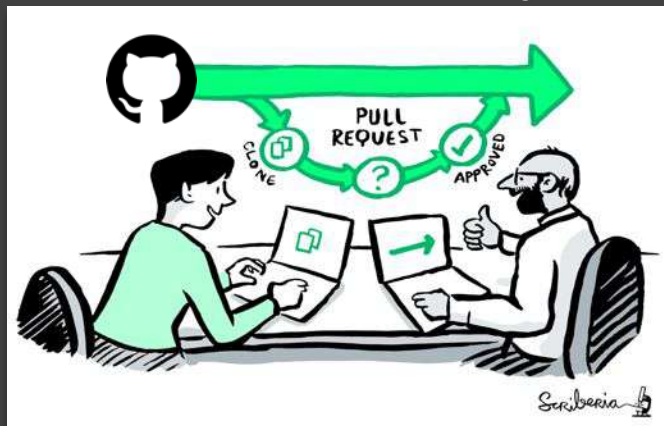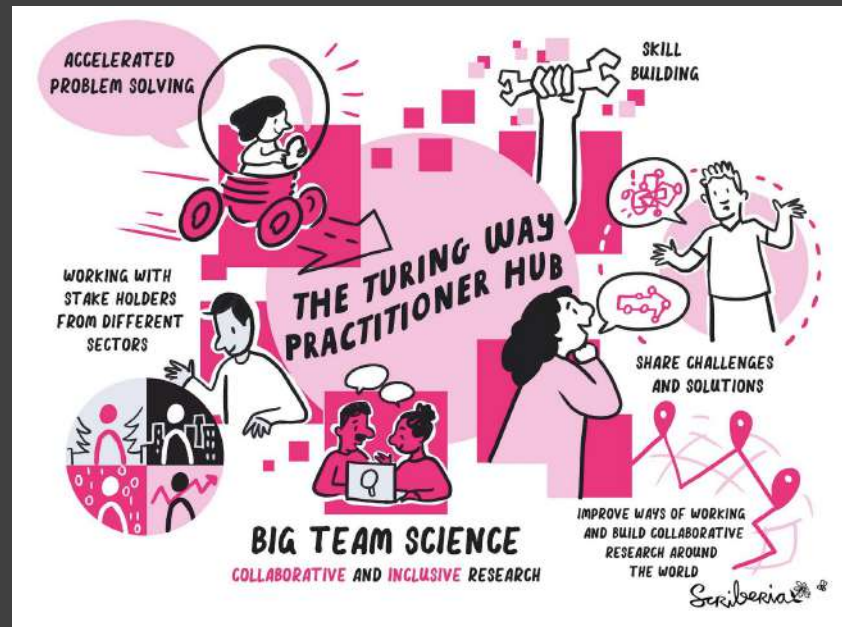
A Book
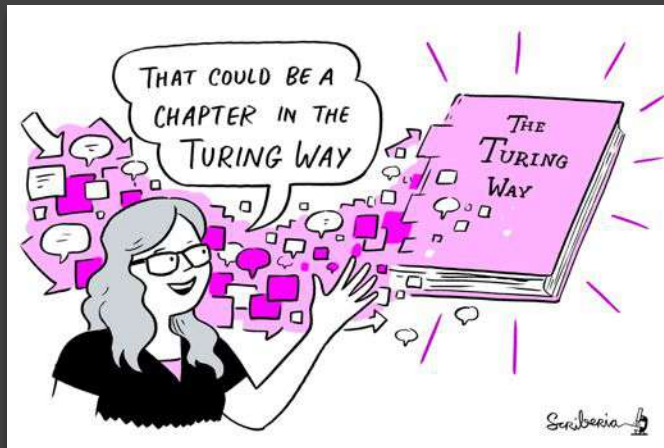
A Community

An Open Source Project

A Culture of Collaboration

Extending the impact through 'Practitioners Hub'

A forum for cross-sector engagement, knowledge exchange and strategic collaboration with organisations across academia, research, engineering systems, government, and healthcare leading data science initiatives.

The Turing Way Practitioners Hub

Systematic approach for building a shared understanding of open science, reproducibility, accessibility and research ethics to enhance quality, rigour and integrity in data science and AI.

Practitioners Hub: Scale & Scope

Practitioners Hub Inaugural Cohort May 2023 - October 2023

Funded by:

- Phase 1: Ecosystem Leadership Programme (UKRI funded)
- Phase 2 and 3: BridgeAI* and additional fundraising

Project Phases:

Phase 1 (Oct 22 - Apr 23)	Scoping and onboarding the partners
Phase 2 (May 23 - Oct 23)	Custom resource, activity and engagement
Phase 3 (Nov 23 - Dec 26)	Future cohorts, scaling and sustainability

*BridgeAI (Innovate UK KTN (ktn-uk.org) aims to help businesses in high growth sectors such as agriculture, construction, creative and transport industries, to harness the power of AI and unlock their full potential. The Practitioner Hub will extend the impact of The Turing Way community approaches and resources those sectors.

Practitioner Hub's "Expert in Residence"

– Recognising a champion for open science and reproducibility from each partnering organisation

– Support for 0.2 FTE for 6 months

– Join the cohort of Experts from different partnering organisations

– Co-developer of case studies highlighting impacts of best practices in their org/sector

– Serve as the primary contact
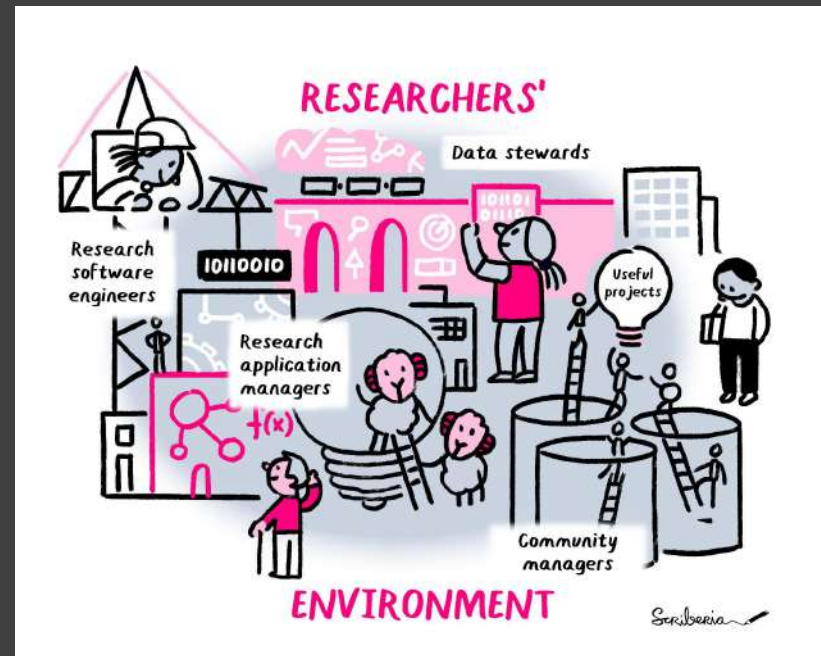
Practitioners Hub's Overarching Goals

Accelerating the adoption of best practices in the partnering organisations

- Co-creation of case studies highlighting the impacts of data science best practice.

- Embed community practices to enable knowledge exchange and team science

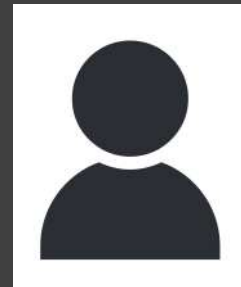- Foster a network of 'Experts in Residence'

Practitioners Hub Team & Roles

Kirstie Whitaker

TPS Programme Director,
The Turing Way Lead

Malvika Sharan

TPS Senior Researcher,
The Turing Way co-lead

To be Recruited

Senior Research Associate

Jennifer Ding

TPS Senior Researcher -
Research Application Manager

**Alexandra
Araujo Alvarez**

Research Project Manager

Shane Conneely

Partnership Development
Lead - TPS

Practitioners Hub: 1st Half of the Cohort

Month 1 (May)

- Onboarding meeting with partners & cohort members represented by Experts (in Residence).
- Planning case studies with experts.
- Building roadmap and customised engagement and skill exchange plan.

Month 3 (July)

- First drafts of case studies with experts.
- Connecting cohort with the Turing, BridgeAI, open science resources & good practices across sectors.
- Working with experts in planning skill development & training opportunities for partner organisations.

Month 2 (June)

- Working with the Experts to capture impact of best practices in respective organisations and their sectors.
- Stakeholder and skill mapping with each partners.
- Facilitated planning of knowledge share (Fireside Chat, Book Dash or customised events) among cohort members.

Slide deck developed for The Turing Way Practitioners Hub Partners

Practitioners Hub: 2nd Half of the Cohort + future collaboration

Month 4

- Project-specific engagement from organisation
- Building and beginning the customised consulting, support and collaborative research
- Beginning the implementation of customised support (community, research application, open source, other shared priorities?)

Future

- Institutional investment in funding the engagement of Experts in Resident.
- Future collaboration in the Turing, BridgeAI and/or the Turing Institute.
- Document and report the collaborative work openly.

Month 5-6

- Continue the implementation of customised support (community, research application, open source, other shared priorities?)
- Assess organisational intent to continue engagement beyond the cohort.

Slide deck developed for The Turing Way Practitioners Hub Partners

Connect beyond the Practitioners Hub

Collaboration Cafes

– 1st & 3rd Wednesdays (14:00 UTC)

- Coworking Calls

– Mondays (10:00 UTC)

- Fireside Chats

– Monthly on last Fridays

bit.ly/theturingway

Acknowledgements & Links

The Turing Way Community

- Kirstie Whitaker, Anne Lee Steele, Alexandra Araujo Alvarez + many Turing Way Core Team and Turing's TPS team members

- Book: the-turing-way.netlify.com, Twitter: twitter.com/turingway

- GitHub: github.com/alan-turing-institute/the-turing-way

- Useful links & opportunities are listed here: bit.ly/turingway

Images used in this talk have been co-developed by Scriberia and The Turing Way community, shared under CC-BY 4.0.
https://zenodo.org/record/7587336

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