

The  
Alan Turing  
Institute



---

Delivering on open  
and responsible AI  
with *The Turing Way*

Kirstie Whitaker  
Pronouns: she/her

@TuringWay

<https://doi.org/10.5281/zenodo.11188588>

**Research  
Programme  
Director for  
Tools,  
Practices &  
Systems  
The Alan  
Turing Institute**



@TuringWay

<https://doi.org/10.5281/zenodo.11188588>



*The Turing Way* is an **open source book project** that involves and supports a **diverse research community** in ensuring that reproducible and ethical **data science** is accessible and comprehensible **for everyone**.



@TuringWay

<https://doi.org/10.5281/zenodo.11188588>

The Turing Way is:

- a book
- a community
- a global collaboration
- a whole tonne of work



@TuringWay

<https://doi.org/10.5281/zenodo.11188588>



# Thank you to our 400+ contributors



@TuringWay

<https://doi.org/10.5281/zenodo.11188588>



<https://www.software.ac.uk/workshop/collaborations-workshop-2024-cw24>

<https://doi.org/10.5281/zenodo.11188588> @TuringWay



“Opening science involves opening up the processes of creating, evaluating, sharing, exploring and storing scientific knowledge, practices and perspectives.”

“All scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities, are included.”





Personal experience of:

- File drawer effect
- Lack of reproducibility
- Imposter syndrome around coding
- Lonely
- Wasted time
- Hypocrisy of academia

@TuringWay



# VERSION CONTROL



Personal experience of:

- File drawer effect
- Lack of reproducibility
- Imposter syndrome around coding
- Lonely
- Wasted time
- Hypocrisy of academia

An aerial photograph of a sandy beach with several people and dogs scattered across it. The ocean waves are visible at the bottom of the frame. The text is overlaid on the image.

# AUDIENCE PARTICIPATION

What's your  
“wear sunscreen”  
advice around open  
research?

Mary Schmich

[https://en.wikipedia.org/wiki/Wear\\_Sunscreen](https://en.wikipedia.org/wiki/Wear_Sunscreen)

@TuringWay

<https://doi.org/10.5281/zenodo.11188588>





---

# The Turing Way

A handbook for reproducible research

Kirstie Whitaker

Collaborations Workshop Demo, 2 April 2019

Slides at <https://doi.org/10.5281/zenodo.2621280>



# The Alan Turing Institute to spearhead new cutting-edge data science and AI research after £48 million government funding boost

Tuesday 18 Dec 2018

Learn more ↓

<https://www.turing.ac.uk/news/alan-turing-institute-spearhead-new-cutting-edge-data-science-and-artificial-intelligence>

<https://doi.org/10.5281/zenodo.11188588>

# What does reproducible mean?

		Data	
		Same	Different
Analysis	Same	Reproducible	Replicable
	Different	Robust	Generalisable

---

# Why don't people do this already?

Is not considered for  
promotion

Takes time

Publication bias  
towards novel  
findings

## **Barriers to reproducible research**

Requires  
additional skills

Plead the 5th

Support additional users

Held to higher standards  
than others

---

# Why don't people do this already?

Is not considered for  
promotion

Takes time

Publication bias  
towards novel  
findings

## Barriers to reproducible research

Requires  
additional skills

Plead the 5th

Support additional users

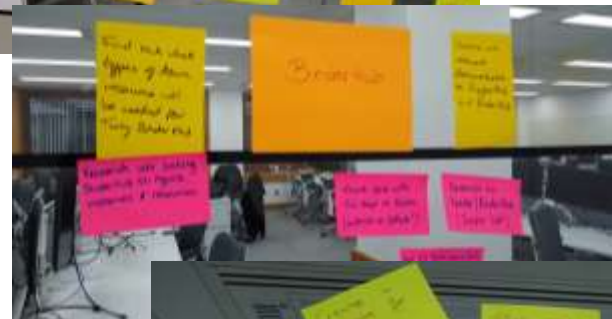
Held to higher standards  
than others



# Requires additional skills

Chapters will include:

- Research data management
- Open science
- Reproducibility
- Version control with git
- Your working environment (IDE, notebooks etc)
- Capturing your compute environment
- Testing for research
- Continuous integration
- Collaborating through GitHub/GitLab










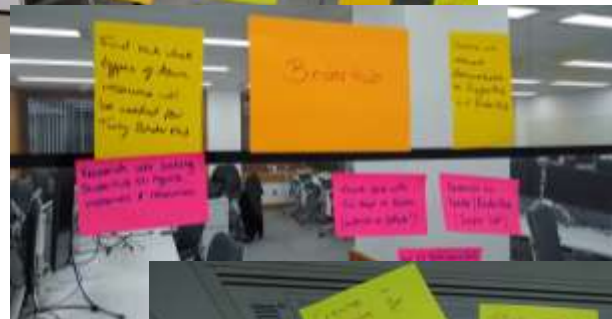
[https://github.com/alan-turing-institute/the-turing-way/blob/master/book\\_skeleton.md](https://github.com/alan-turing-institute/the-turing-way/blob/master/book_skeleton.md)

<https://doi.org/10.5281/zenodo.11188588>

# Requires additional skills

Chapters will include:

- Research data management 
- Open research 
- Reproducibility 
- Version control with git 
- Your working environment (IDE, notebooks etc)
- Capturing your compute environment 
- Testing for research 
- Continuous integration 
- Collaborating through GitHub/GitLab



[https://github.com/alan-turing-institute/the-turing-way/blob/master/book\\_skeleton.md](https://github.com/alan-turing-institute/the-turing-way/blob/master/book_skeleton.md)

<https://doi.org/10.5281/zenodo.11188588>

# Our UK university network

Aston University  
Birkbeck University of London  
Cardiff University  
City, University of London  
Coventry University  
Durham University  
Edinburgh Napier University  
Goldsmiths, University of London  
Heriot-Watt University  
Imperial College London  
Keele University  
King's College London  
Lancaster University  
London Business School  
London School of Hygiene  
and Tropical Medicine  
Loughborough University  
Manchester Metropolitan University  
Newcastle University  
Northumbria University  
Nottingham Trent University  
Oxford Brookes University  
Queen Mary University of London  
Queen's University Belfast  
Royal Holloway University of London  
Royal Veterinary College  
Sheffield Hallam University  
Swansea University  
Teesside University  
The London School of Economics  
and Political Science  
The Open University  
The University of Leicester  
The University of St Andrews



University College London  
University of Aberdeen  
University of Bath  
University of Birmingham  
University of Bradford  
University of Bristol  
University of Cambridge  
University of Dundee  
University of East Anglia  
University of Edinburgh  
University of Essex  
University of Exeter  
University of Glasgow  
University of Greenwich  
University of Hull  
University of Leeds  
University of Lincoln  
University of Liverpool  
University of Manchester  
University of Nottingham  
University of Oxford  
University of Plymouth  
University of Portsmouth  
University of Reading  
University of Salford  
University of Sheffield  
University of Southampton  
University of Strathclyde  
University of Surrey  
University of Sussex  
University of Warwick  
University of Westminster  
University of York

@TuringWay @kirstie\_j





**Changing the world for the better  
using data science and AI,  
providing an end-to-end,  
interdisciplinary pathway,  
enabling impact at scale and major  
progress against societal challenges.**





---

# Open to enable responsible AI

All elements of open scholarship should be in service of equity, diversity and inclusion.

Faster, more accessible  
→ Better quality insights  
→ A more just world



Whitaker & Guest, 2020.

<https://www.bps.org.uk/psychologist/bropenscience-broken-science>

<https://hdl.handle.net/2066/226397>

@TuringWay

<https://doi.org/10.5281/zenodo.11188588>

# Who is building open source AI?

21 September, 14:00 - 15:30 UTC+1

*Register on Eventbrite*

Defining



**Arielle Bennett**

Programme Manager  
The Alan Turing Institute



**Mophat Okinyi**

Union Representative  
African Content Moderators Union



**Marzieh Fadaee**

Senior Research Scientist  
Cohere for AI



**Abinaya Mahendiran**

CTO  
Nunnari Labs



**David Gray Widder**

Postdoctoral Fellow  
Cornell Tech



**Jennifer Ding**

Senior Researcher  
The Alan Turing Institute



Hosted  
by:



open source  
initiative\*





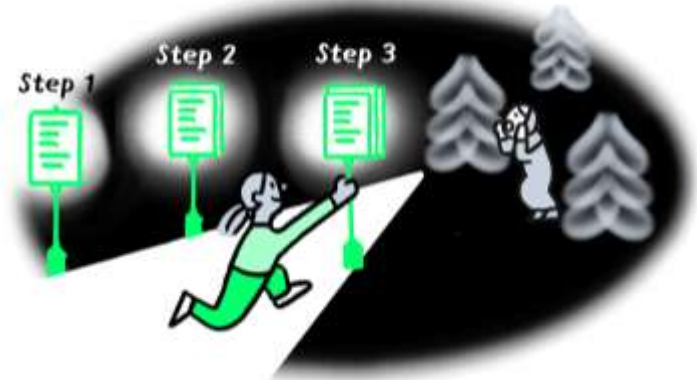
**“Digital assets should  
be findable, accessible,  
interoperable, and  
reusable”**



# TRACK PROJECT HISTORY



## DOCUMENTATION



<https://the-turing-way.netlify.app/project-design/data-governance/data-gov-ml>

<https://the-turing-way.netlify.app/reproducible-research/vcs>

<https://the-turing-way.netlify.app/project-design/project-design>

@TuringWay

<https://doi.org/10.5281/zenodo.11188588>

A large field of glowing jack-o'-lanterns at night, with a semi-transparent text box in the center. The pumpkins are carved with various faces and are illuminated from within, creating a warm orange glow. Some pumpkins have blue or purple lights around them. The background is dark with some trees and foliage.

“Given enough eyeballs, all bugs are shallow”

Our human needs  
are one of the major  
reasons that working  
openly is so  
challenging





# THERE'S MORE TO COLLABORATION

THAN YOU MIGHT THINK!



Sensbaeva

@TuringWay





**“You don’t need a diversity committee if you have a diverse committee”**

@TuringWay

Teon Brooks, <https://teonbrooks.com>

<https://doi.org/10.5281/zenodo.11188588>

Whose voices are missing?

- In this room
- In your research collaborations
- At data science conferences



@TuringWay

## Localisation & Translation

Batool Almarzouq, Andrea  
Tapia Sanchez, Melissa Black

## Research Infrastructure Roles

Arielle Bennett, Esther Plomp,  
Emma Karoune (Skills Policy Award)

## Training and outreach

Regular volunteer and experts  
from the community



## Infrastructure Maintainers

Sarah Gibson, Jim Madge,  
Danny Garside, Brigitta Sipőcz

## Accessibility

Liz Hare, Laurel Ascenzi,  
Alexandra Araujo Alvarez

Different PathWAYS  
in *The Turing Way*

## Practitioners Hub

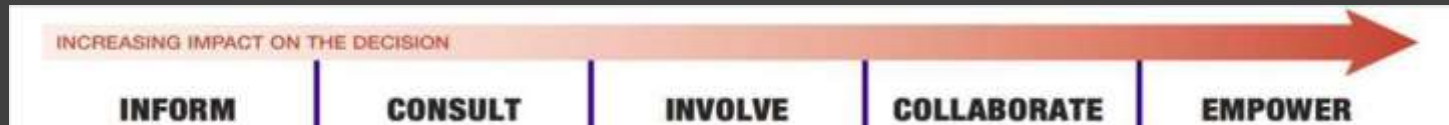
Cross-sector engagement

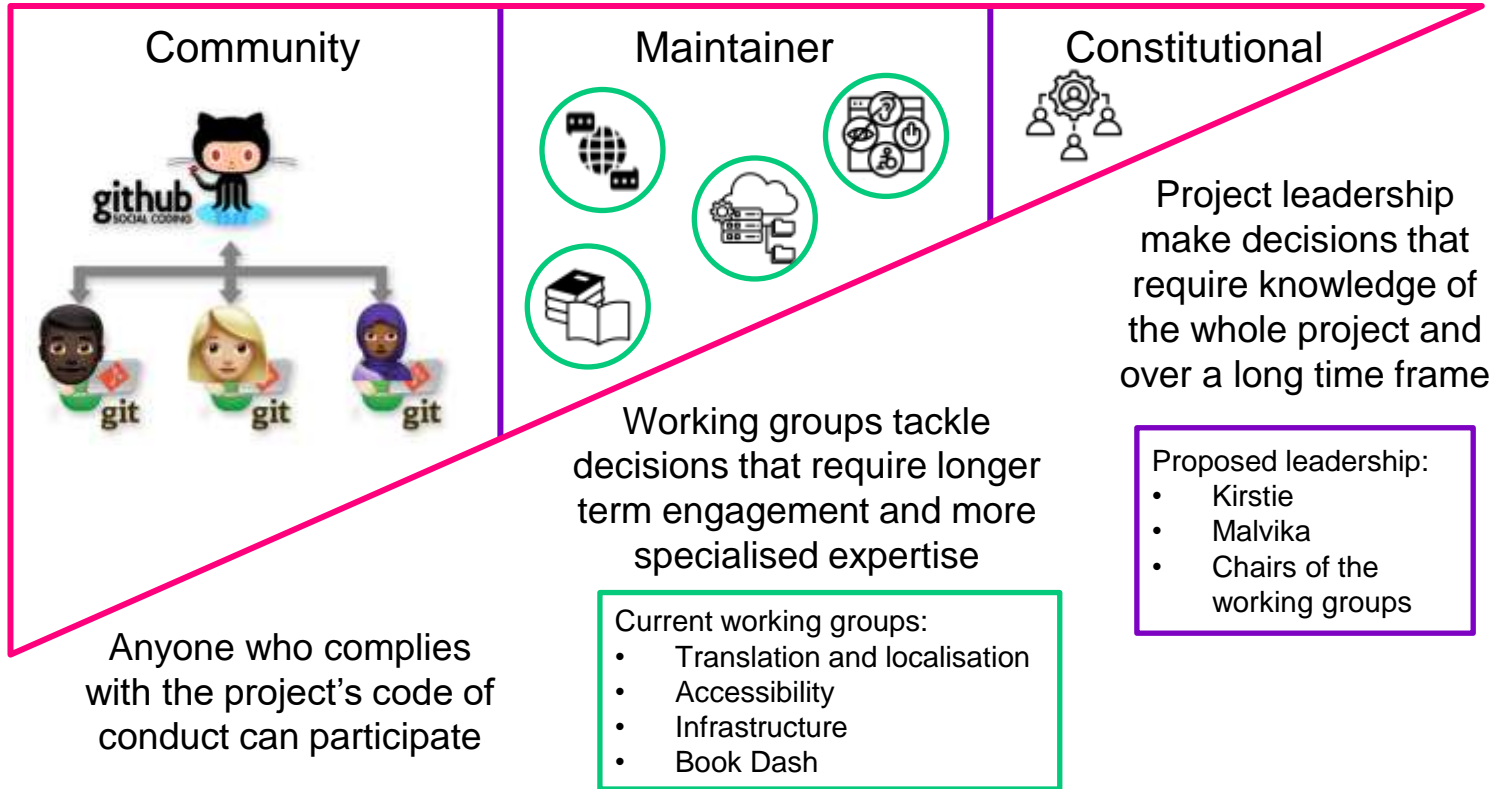
## Environmental Data Science

Alejandro Coca, Anne Fouilloux

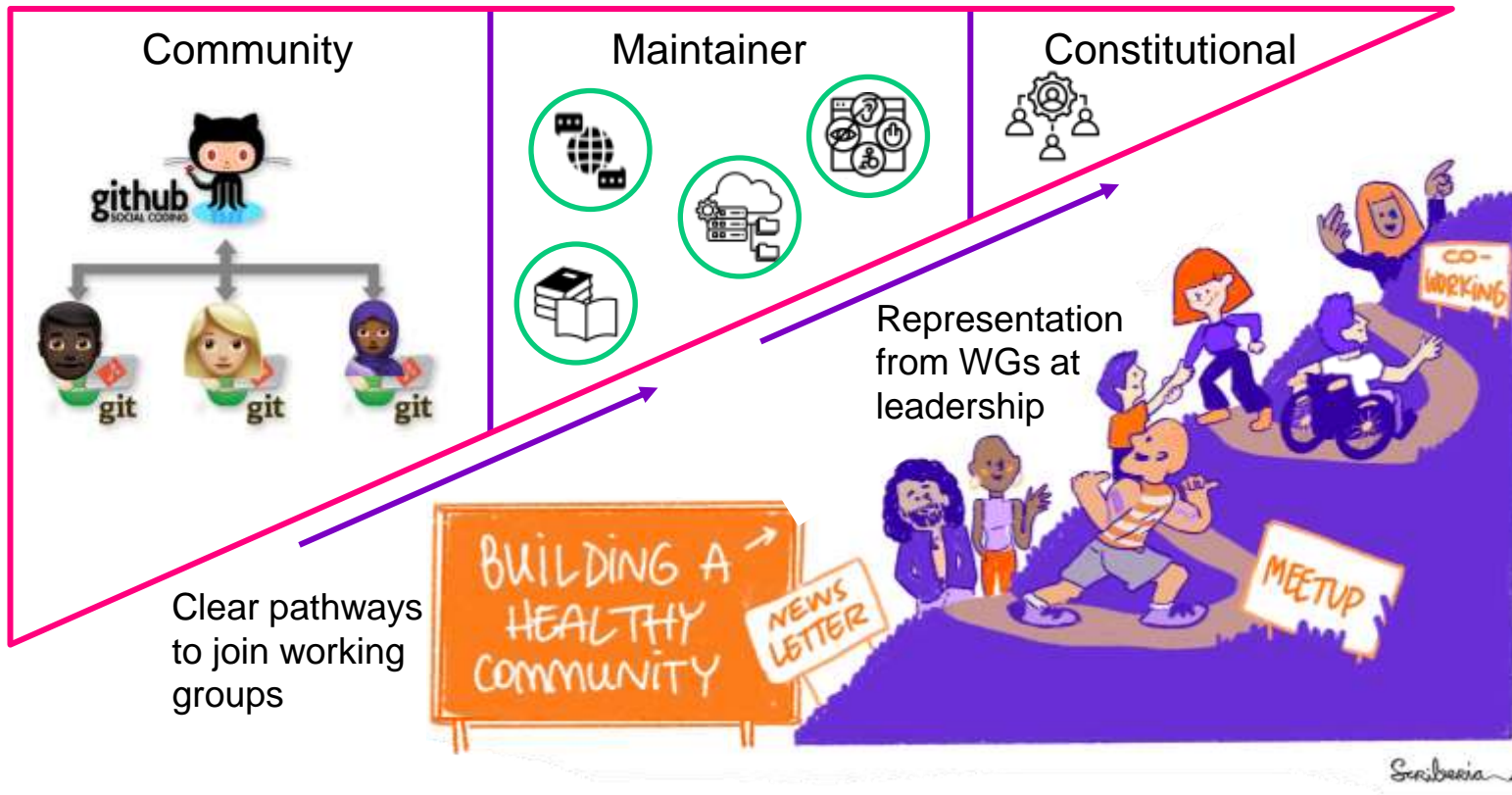
## Book Dash and Community Events

Team and term-based roles.









---

# Malvika Sharan

“No one can change research culture on their own. Scaling our community by empowering YOU to participate is how we will change the world.”



# AUDIENCE PARTICIPATION

How can your work  
connect with, collaborate  
with OR benefit from  
*The Turing Way?*

@TuringWay

<https://doi.org/10.5281/zenodo.11188588>

---

# Please join us in The Turing Way!

- 📌 Bookmark the start page: <https://the-turing-way.start.page>
- 📖 Read the guides: <https://book.the-turing-way.org>
- 📄 Contribute on GitHub: <https://github.com/the-turing-way/the-turing-way>
- ❤️ Subscribe to our newsletter: <https://buttondown.email/turingway>
- 🗨️ Chat with us on slack: <https://tinyurl.com/jointuringwayslack>
- ☕ Join a collaboration cafe: <https://annuel2.framapad.org/p/ttw-collaboration-cafe>
  - Next one: 15 May 2024, 15:00-17:00 BST / 14:00-16:00 UTC
- 🗣️ Join an onboarding call: <https://annuel2.framapad.org/p/ttw-onboarding>
- 🎨 Use The Turing Way Scriberia images (CC-BY): <https://doi.org/10.5281/zenodo.3332807>

This work was supported by The UKRI Strategic Priorities Fund under the EPSRC Grant EP/T001569/1, particularly the "Tools, Practices and Systems" theme within that grant, and by The Alan Turing Institute under the EPSRC grant EP/N510129/1.

@TuringWay

<https://doi.org/10.5281/zenodo.11188588>





Scriberia

@TuringWay