

The Alan Turing Institute

Building a Culture of Collaboration in Open Source Communities

Malvika Sharan

Pronouns: she/her



The Turing Way



An **Open Source** project that involves and supports its **diverse community** to make data science is **reproducible, ethical, collaborative and inclusive** for everyone.

The Alan Turing Institute

The national institute
for data science and
artificial intelligence



Tools, Practices and Systems

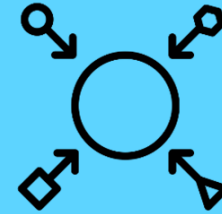
- Trustworthy systems
- Transparent reporting
- Inclusive interoperable design
- Ethical integrity
- Respectful co-creation
- Leadership in open research



Trust



Transparency



Inclusivity



Integrity



Respect



Leadership

The Turing Way Book on Reproducibility



Kirstie Whitaker

Lead of Tools, Practices
& Systems Programme

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.

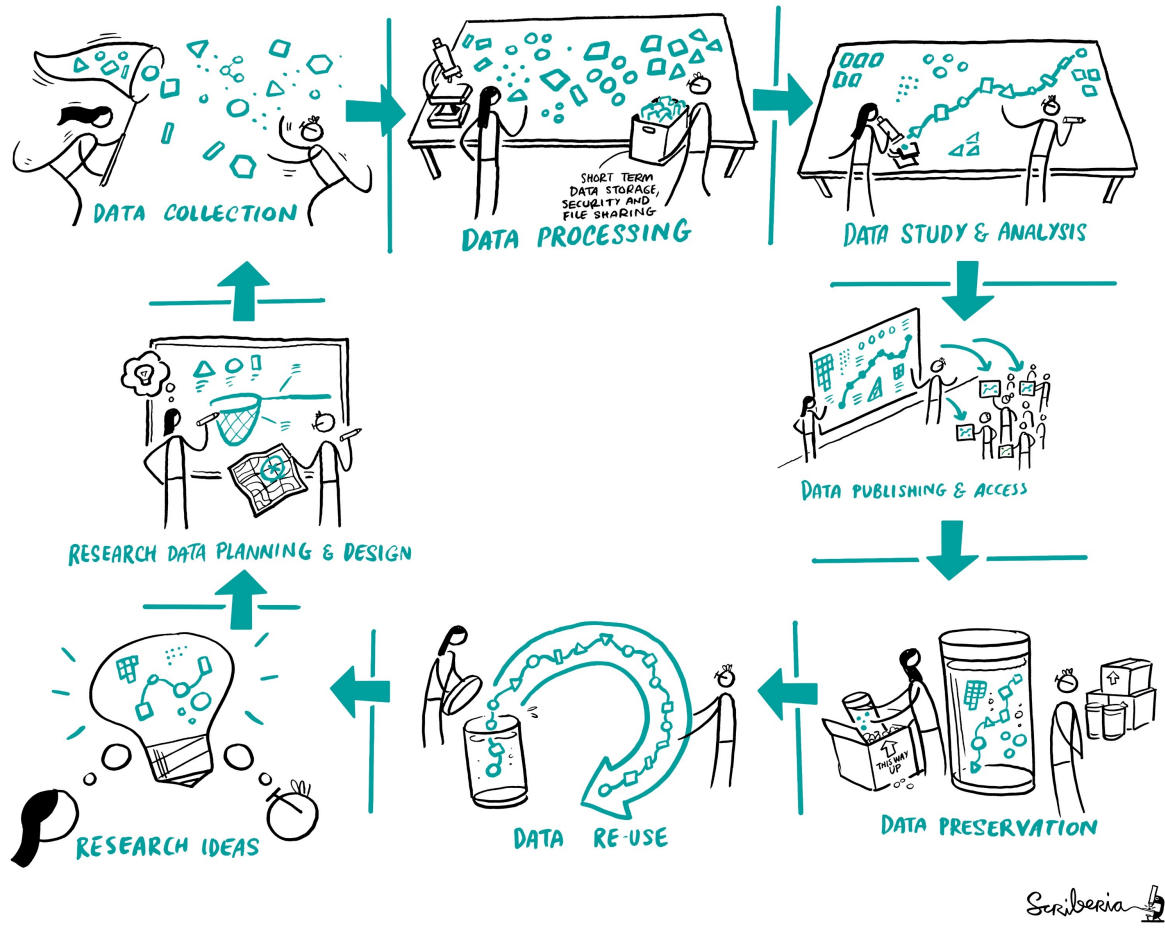


Reproducibility

		Data	
		Same	Different
Analysis	Same	Reproducible	Replicable
	Different	Robust	Generalisable

Reproducibility

		Data	
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Expansion of Scope



The Turing Way

Search this book...

Welcome

Guide for Reproducible Research

Guide for Project Design

Guide for Communication

Guide for Collaboration

Guide for Ethical Research

Community Handbook

Afterword

Visit our [GitHub Repository](#)

This book is powered by [Jupyter Book](#)

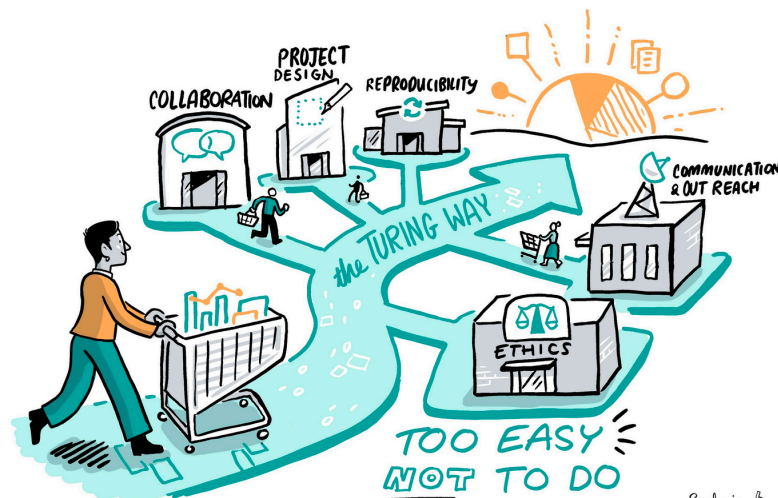
Welcome

The Turing Way is an open source community-driven guide to reproducible, ethical, inclusive and collaborative data science.

Our goal is to provide all the information that data scientists in academia, industry, government and the third sector need at the start of their projects to ensure that they are easy to reproduce and reuse at the end.

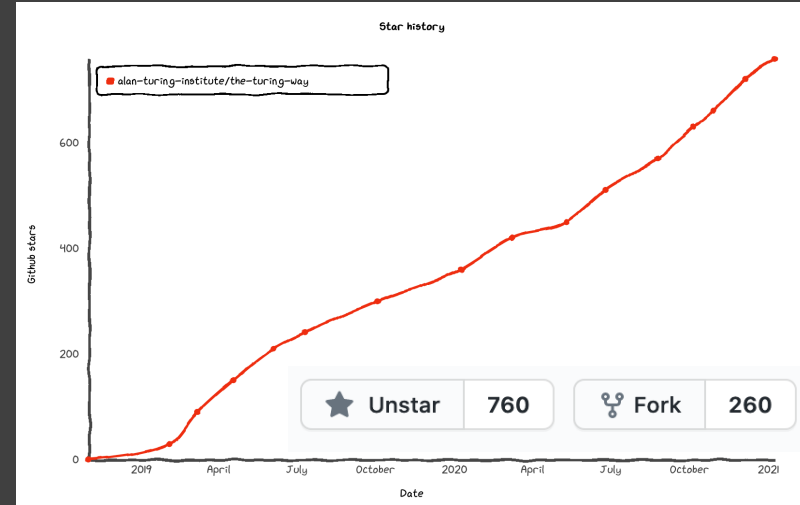
The book started as a guide for reproducibility, covering version control, testing, and continuous integration. However, technical skills are just one aspect of making data science research "open for all".

In February 2020, *The Turing Way* expanded to a series of books covering reproducible research, project design, communication, collaboration, and ethical research.

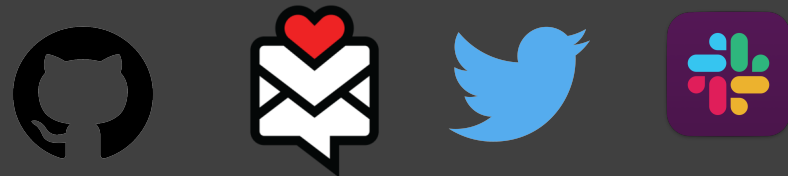
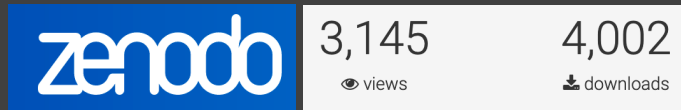


Project and Community Growth

- 2 years, >134 subchapters
- Community resources, guidance, templates, training
- 250 direct GitHub contributors and thousands of users



<https://zenodo.org/record/4323154>



<https://star-history.t9t.io/#alan-turing-institute/the-turing-way>, <https://zenodo.org/record/4536336>, @malvikasharan



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

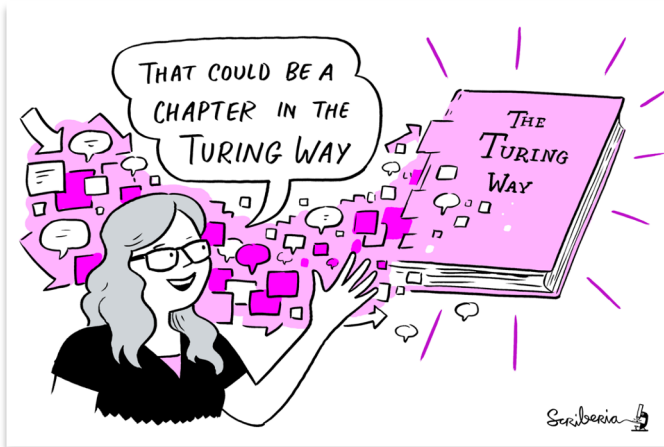
GitHub:
github.com/alan-turing-institute/the-turing-way

Twitter:
twitter.com/turingway

Email:
theturingway@gmail.com

CC-BY 4.0, *The Turing Way*

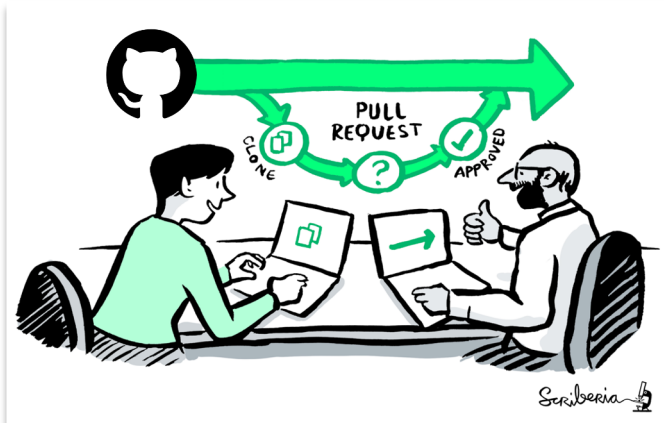
A Book



A Community



An Open Source Project



A Culture of Collaboration



Three Areas of Challenges

1. Open Source **Communities**
2. Community **Members**
3. Building **Collaboration**





An Open source community refers to collaborative efforts in an open source software or resource development that:





An Open source community refers to collaborative efforts in an open source software or resource development that:

- anyone can join and contribute
- collaboratively determine the direction and goals
- make resulting work available under a free license



Members of Open Source

Common goals in the project

Diverse backgrounds & expectations

Support open source movement



Members of Open Source

Common goals in the project

Diverse backgrounds & expectations

Support open source movement

Collaborate in a community!

Experience different challenges.



Building Collaboration

Building Collaboration

 Product



Building Collaboration

Product

 Maintain reproducibility, accessibility, ethical standards




Building Collaboration

Product

-  Maintain reproducibility, accessibility, ethical standards
-  Develop, test, document, archive, promote project

Building Collaboration

Product

-  Maintain reproducibility, accessibility, ethical standards
-  Develop, test, document, archive, promote project
-  Receive support, tasks, training, mentoring, review, feedback


Building Collaboration

Product

 Maintain reproducibility, accessibility, ethical standards

 Develop, test, document, archive, promote project

 Receive support, tasks, training, mentoring, review, feedback

 Inclusive culture, open communication, positive interactions, guidelines, diverse representation, onboard and offboarding pathway, funding, transparency, governance, reports, incentives, connections, opportunities, mental health awareness, accessibility,

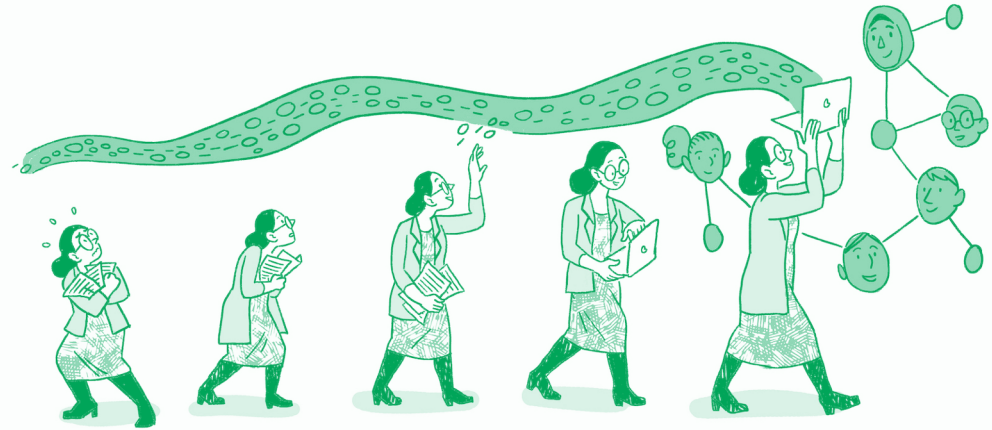
<insert other hidden labour in open source that deserves more recognition>

Building Community

Open is by default not:

- Inclusive
- Accessible
- Community-led

Intentional designing



EVOLVING TOWARDS AN
ERA OF
OPEN SCIENCE

Scriberia 

Building Community

Process of granting access to skills and support that an individual or a group needs to participate in a community, and influence decision-making process.

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Process of granting access to skills and support that an individual or a group needs to participate in a community, and influence decision-making process.

The end goal of building a community through collaboration is to distribute power equally throughout the community.

1. Design for Inclusion

because it shouldn't be an afterthought.



Open leadership is a set of practices and skills people can use and build projects that allows them to collaborate within inclusive communities.

1. Design for Collaboration



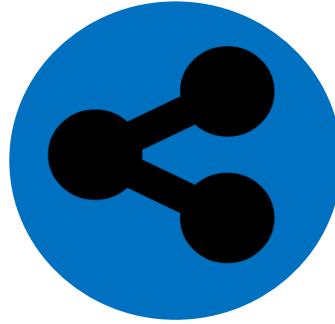
Understanding

Your work is clear, authentic
and widely accessible

1. Design for Collaboration



Understanding



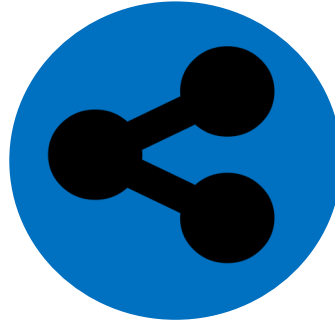
Sharing

Your work can be adapted,
reproduced, and built upon

1. Design for Collaboration



Understanding



Sharing

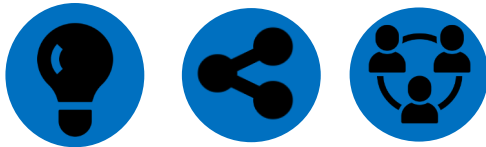


Participation & Inclusion

Creates a shared ownership
that inspires contributions

Every contribution counts

The Turing Way fosters a culture of collaboration

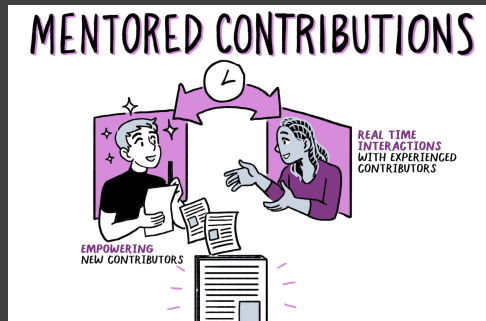


Open Leadership principles

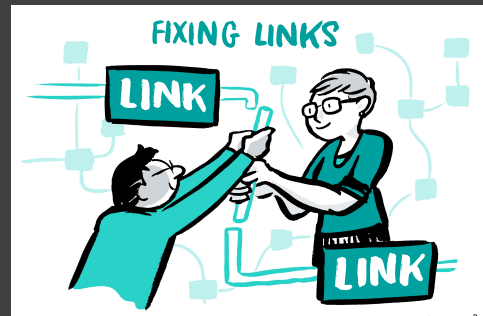


Scriberia

Pathways for Collaboration



Develop & share



Maintain & improve



Review and update



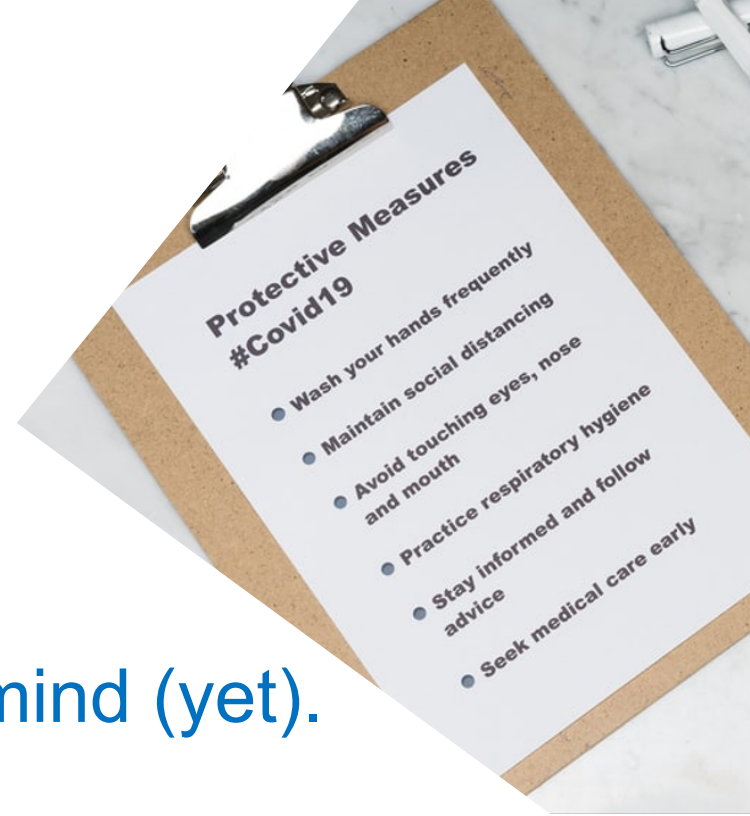
Make it global



Share best practices

2. Develop Guidelines

because no one can read your mind (yet).



Social norms drive behaviour and affect community culture. To avoid detrimental impact of **unwritten rules**, we **transparently communicate** them with the community.

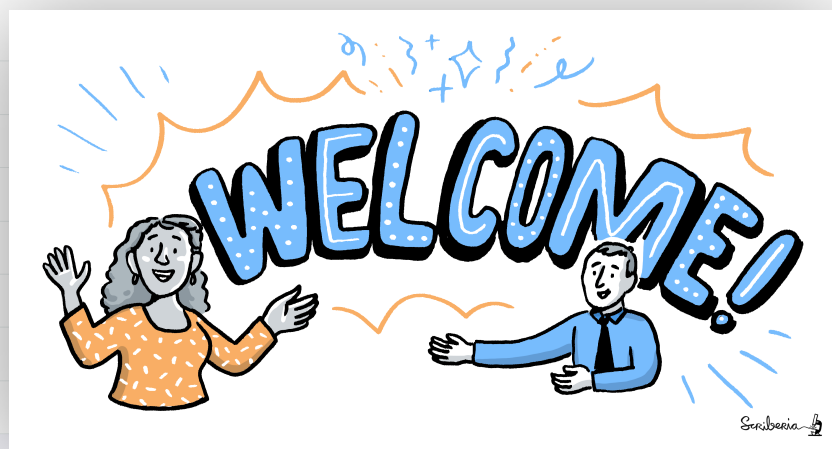
2. Develop Guidelines

- How to **learn** about the project?
- How to **participate** and **contribute**?
- What **tools and platform** you use?
- What is the **eligibility** for entry?
- What are the **roles and rewards**?



Scriberia

📁 .github	Remove prettier configuration	
📁 book	minor update	
📁 communications	Fix typos	
📁 conferences	Add KW formatting pedantry	
📁 project_management	Update online-collaboration-cafe.md	
📁 templates	Updating Github templates	
📁 tests	Add "et cetera" as a deprecated Latinism	
📁 workshops	Remove mis-pasted text	
📄 .all-contributorsrc	Merge pull request #991 from alan-turing-institute/all-contributors/a...	5 days ago
📄 .gitignore	ignore pptx in workshop folder	9 months ago
📄 .travis.yml	add html-proof file again	last month
📄 CODE_OF_CONDUCT.md	her -> their	6 months ago
📄 CONTRIBUTING.md	Update CONTRIBUTING.md	2 months ago
📄 GOVERNANCE.md	Read through months later	5 months ago
📄 LICENSE.md	Fix typo in licence	2 months ago
📄 README.md	Merge pull request #991 from alan-turing-institute/all-contributors/a...	5 days ago
📄 book_skeleton.md	Update book_skeleton.md	13 months ago
📄 contributors.md	Add myself to contributors.md	11 months ago
📄 tips_and_tricks_survey.md	Update tips_and_tricks_survey.md	14 months ago
📄 ways_of_working.md	Adjust team contact section	5 months ago



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

The Turing Way Community Handbook

Community Handbook

Code of Conduct

Ways to Enter the Project

Style Guide

Maintaining Consistency

Chapter Templates and
Contribution Workflow

Acknowledging Contributors

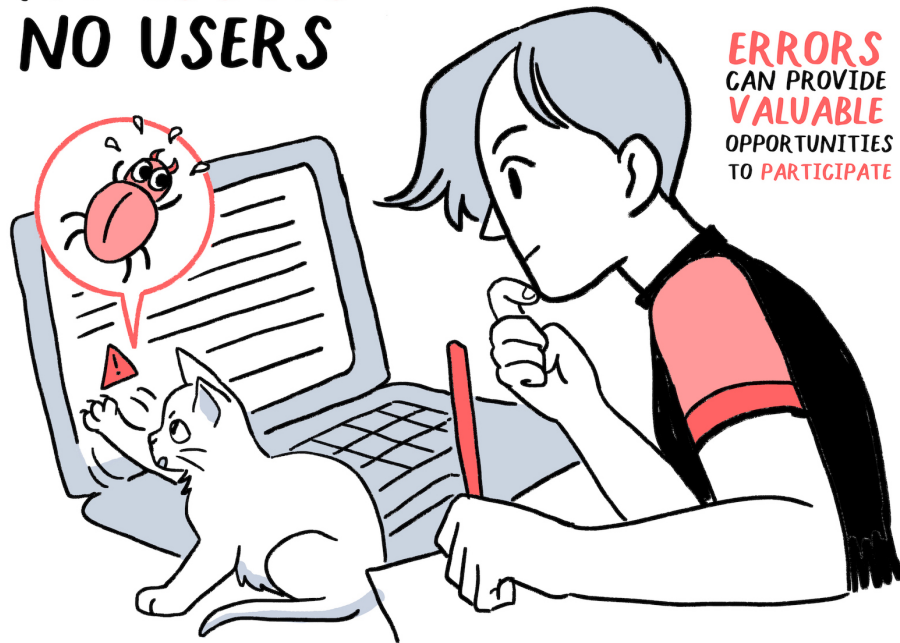
Monthly Newsletters

Book Dash Events

Community Coworking Calls

Template Collection

**NO ISSUES
NO USERS**



**ERRORS
CAN PROVIDE
VALUABLE
OPPORTUNITIES
TO PARTICIPATE**

Scriberia

3. Foster a Sense of Ownership

because communities are not built on one person's opinion.



We **avoid individual authorship** in favour of establishing shared ownership and agency in this project. The **project belongs to the community** and is always a ‘work in progress’.

📄 alan-turing-institute / the-turing-way

🚫 Issues 323

🔗 Pull requests 58



All Contributors

Recognize All Contributors

Including those that don't push code

Enable Jupyter Book / Enable collaborative annotation in the book #1561

BatoolMM merged 12 commits into master from hypothesis on 20 Nov 2020

Discussion 8 Commits 12 Checks 8 Files changed 3



BatoolMM commented on 10 Nov 2020 • edited

Collaborator

Reviewers

yochannah

malvikasharan

After a discussion in slack regarding the book-layout, @lauracion and @SamGuay suggested implementing [hypothes.is](#). I gave it a try and made changes in `_config.yml`. After that, I tried to build up the Jupyter book locally and it worked. It became easy to highlight any text and to add any notes in the book.



martinagvilas commented on 12 Nov 2020

Collaborator

Thanks @yochannah ! I created a `_static` folder with a file that contains your suggestion, and it seems to work in local deployment. I will make a commit soon to show.

And thanks for noticing about the footer in the sidebar, it seems that we need to change the `_config` file.



BatoolMM commented on 13 Nov 2020

Collaborator Author

Thank you so much @yochannah for the detailed explanation 🙌 . I didn't realise that @martinagvilas fixed it until she mentioned it in shareout/presentation. You are awesome Martina ❤️

👍 2

❤️ 1

🚀 1

Opportunities for Connections



Co-working Calls & Collaboration Cafés



Four Book Dash Events



More than a Book!

The co-working hours are friendly for introverts who might be intimidated working with new people. These personal interactions are also crucial for staying motivated!

Martina G. Vilas

Supporting Development



! Important

Please note that these requirements are not exhaustive or definitive, and neither are their classifications rigid. Moreover, no items are inherently more important than the other.

If you identify more consistency issues that need to be addressed, join the conversation [here](#).



Pay it forward!

I realised that the value I left behind in this Open Source project is not in the amount of work I did, but how I enabled other contributors.

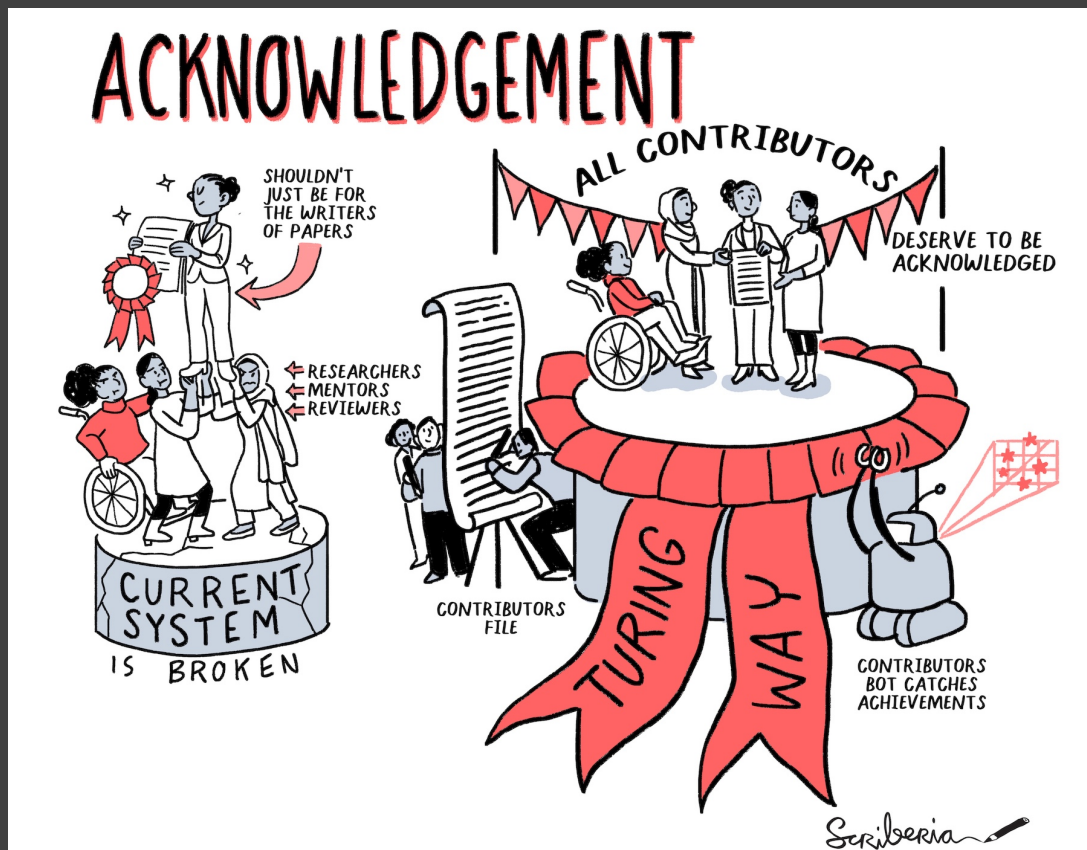
Paul Owoicho, GSoD intern

4. Recognise All Contributions

because we want to incentivise
collaboration and promote diversity.

D A N K E !

Recognise All Contributions



Batool Almarzouq

- Role: Book Dash November 2020 Attendee
- ORCID: [0000-0002-3905-2751](https://orcid.org/0000-0002-3905-2751)
- Short bio:

I'm the founder of R-Ladies in Saudi Arabia (Dammam). I initially majored in pharmacology but quickly developed an interest in biochemistry, structural biology, and bioinformatics. I enjoy applying deep learning to answer biological questions.

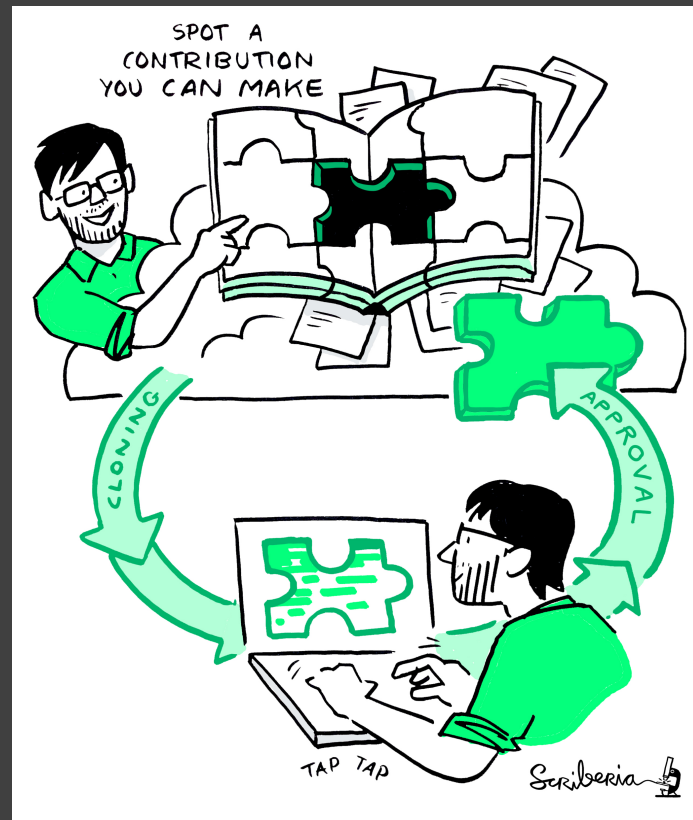
- Personal highlights:

I am currently co-developing a chapter on "CI services". I have helped upgrade the Jupyter Book Infrastructure and add hypothes.is to enable collaborative annotation of *The Turing Way* chapters. I have also translated the README.me chapter in Arabic. Personal quote: "I find it hard to express my personal thoughts and feelings in words. This was such an amazing experience. It helped me to develop my technical skills. Thank you so much to everyone I met in this Book Dash event :heart:"

Meeting you where you are!

- i. Join the community
- ii. Learn a new skill
- iii. Share your skills
- iv. Collaborate with others
- v. Mentor others' contributions
- vi. Represent this community

We value your participation!



Notable Impacts Beyond the project

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

- Reproducibility of scientific results in the EU 2020 (report)
- An Emerging Technology Charter for London (policy)
- Innovation Scholars: UKRI grant 2020 (funding)
- CodeRefinery and Library Carpentries (training)
- Cited by multiple peer-reviewed articles

Culture of Collaboration

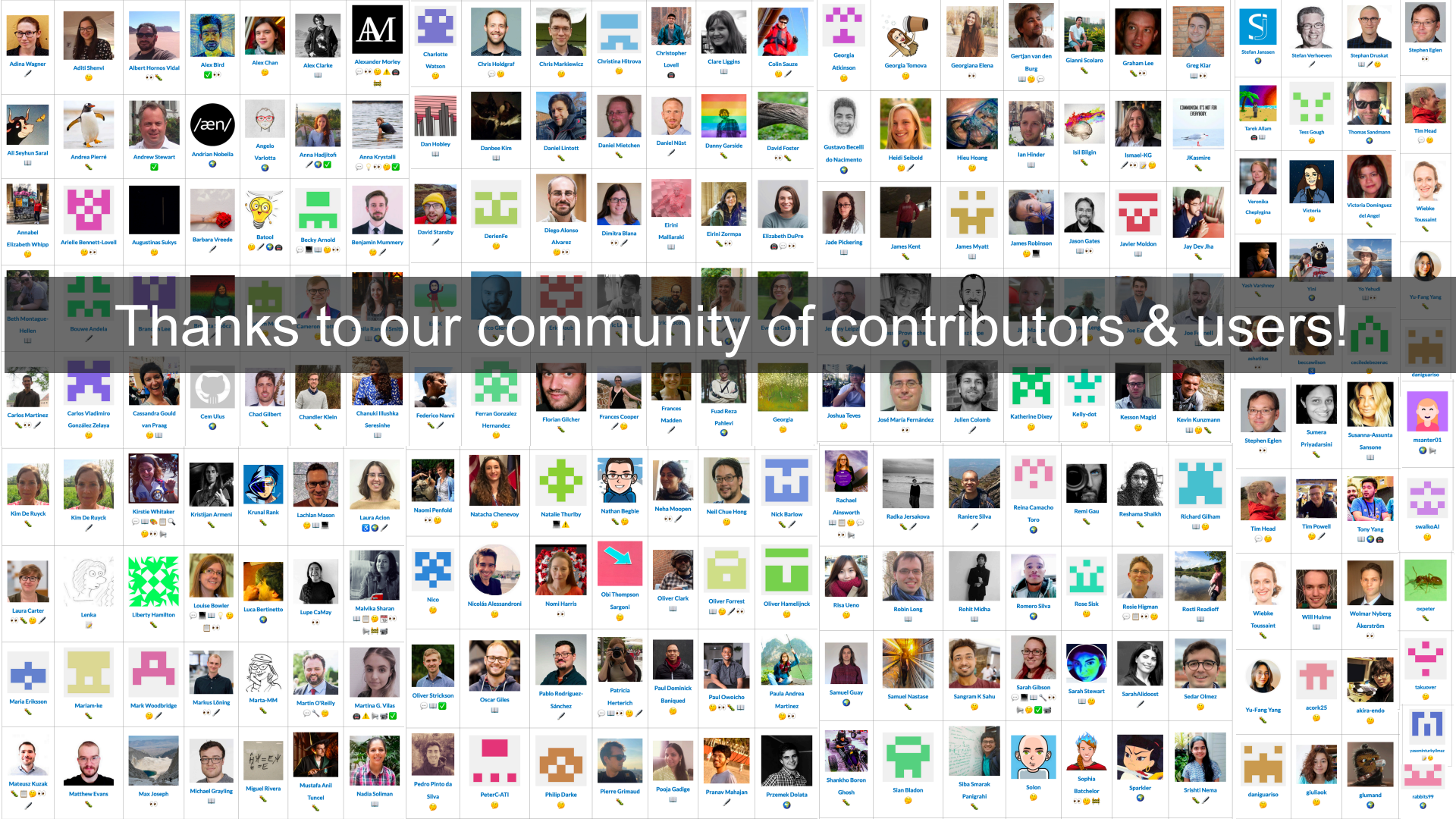
1. Design for inclusion
2. Develop guidelines
3. Foster a sense of ownership
4. Recognise all contributions



Culture of Collaboration

1. Design for inclusion
2. Develop guidelines
3. Foster a sense of ownership
4. Recognise all contributions
5. Invest in community building





Thanks to our community of contributors & users!

The Alan Turing Institute

Acknowledgements:

- Kirstie Whitaker, Whitaker Team Members
- *The Turing Way* community, friends & collaborators
- Book: the-turing-way.netlify.com
- Twitter: twitter.com/turingway
- Newsletter: tinyletter.com/TuringWay
- Chat: gitter.im/alan-turing-institute/the-turing-way
- GitHub: github.com/alan-turing-institute/the-turing-way
- Original artwork by Scriberia: <https://doi.org/10.5281/zenodo.3332808>





**Join our free
online sessions**



#RSCamps

**Research Software Camp:
Research Accessibility
22 February - 5 March**

Spaces available for Turing Way workshop (register for free)
Boost your research reproducibility with Binder – led by Sarah Gibson