

The
Alan Turing
Institute



The Turing Way

Crediting contributions and supporting wider
recognition of diverse data science roles

30 September 2024

Dr Emma Karoune (she/her)

Dr Emma Karoune

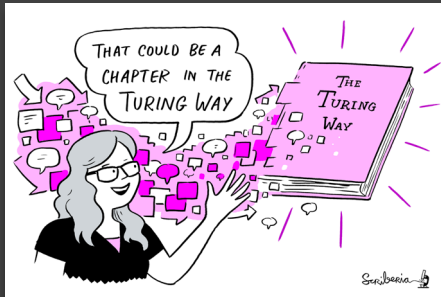
- **Senior Researcher - Community Building** - TPS/Health @The Alan Turing Institute
- **Core team member** - The Turing Way
- **Co-lead** - People in Data
- **Fellow** - SSI Fellow & ELIXIR-UK
- **Committee member** - Hidden REF



The Turing Way

An Open Source guide on Data Science

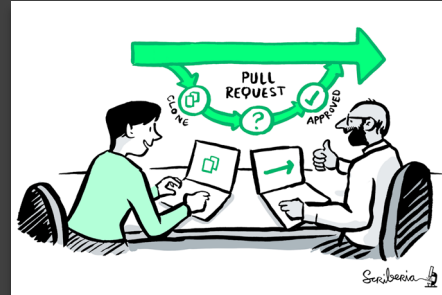
We involve and support a diverse community to make data science reproducible, ethical, collaborative and inclusive for everyone.



A book



**A global
community**



**An open-source
project**



**A culture of
collaboration**

Guide for Reproducible Research

Guide for Reproducible Research

Overview

Open Research

Version Control

Licensing

Research Data Management

Reproducible Environments

BinderHub

Code quality

Code Testing

Code Reviewing Process

Continuous Integration

Reproducible Research with Make

Research Compendia

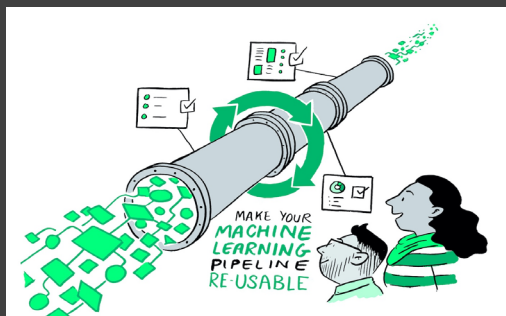
Credit for Reproducible Research

Risk Assessment

Case Studies



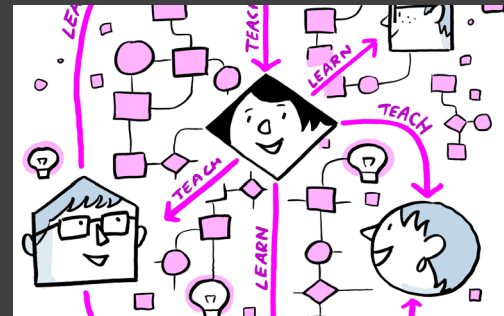
The Turing Way Guides



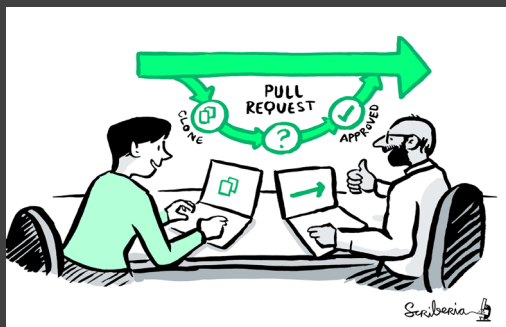
Reproducibility



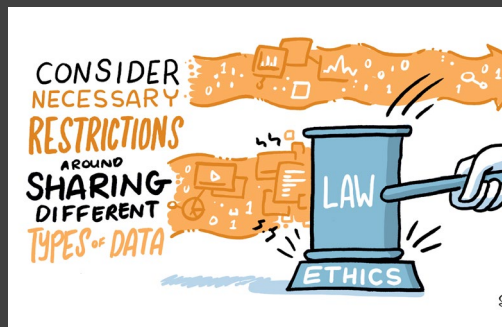
Project design



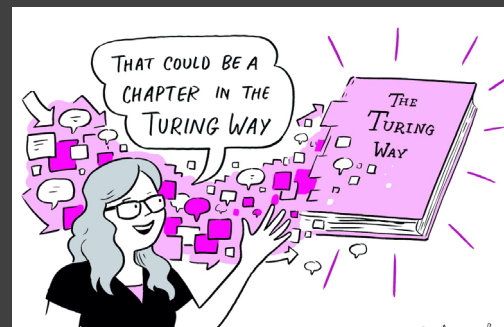
Communication



Collaboration



Ethical research



Community handbook

Project and Community Growth



Kirstie Whitaker

Director: Tools,
Practices & Systems
Programme (TPS)



Malvika Sharan

TPS Senior Researcher:
Open Research &
Community



Anne Lee Steele

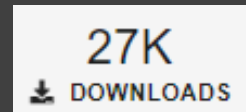
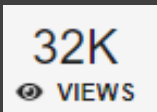
Community Manager,
The Turing Way



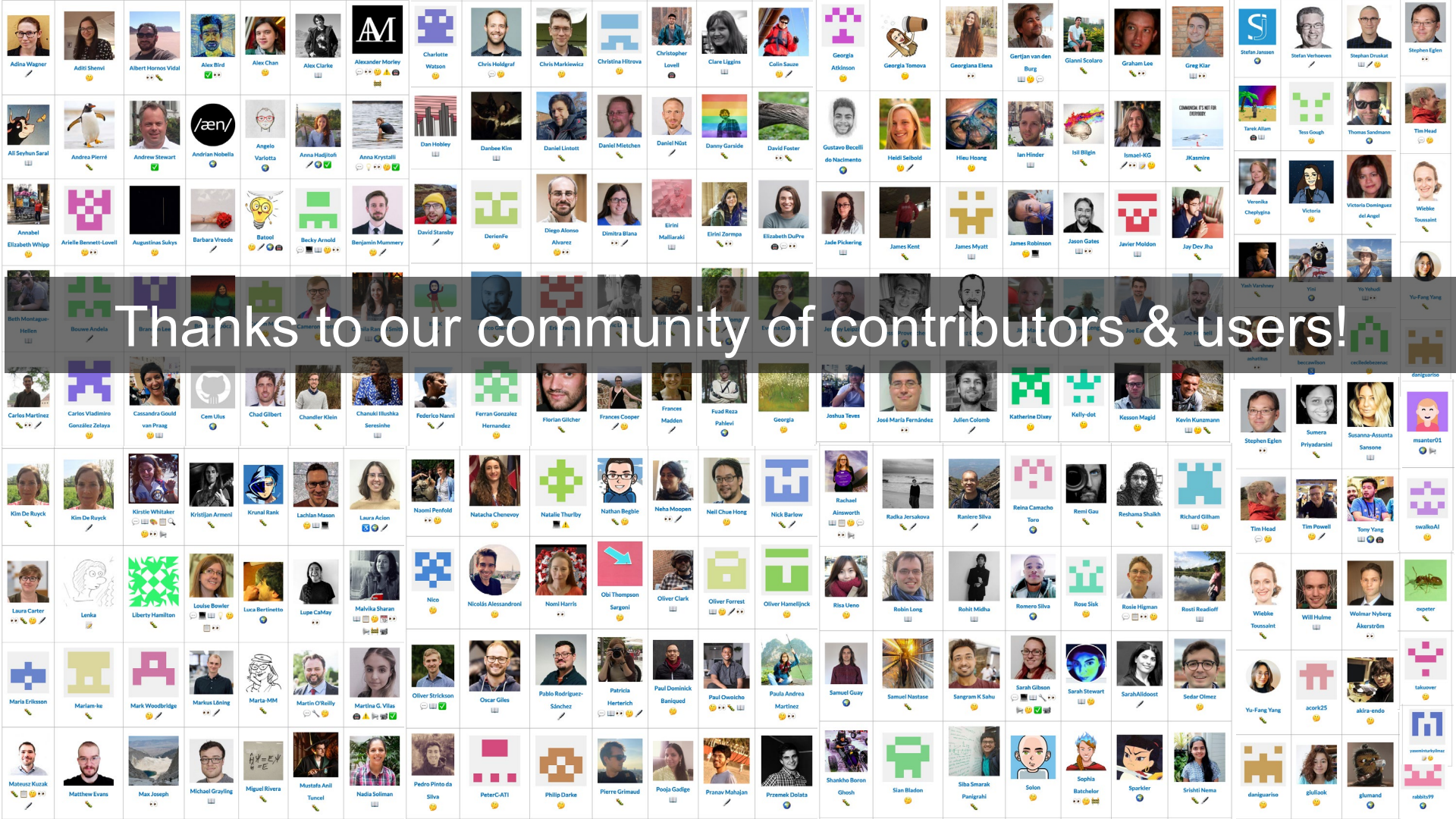
Lelle Demertzi

Project Manager

- ~5 years
- >313 chapters
- Community resources, events, guidance, templates, training
- 498+ direct GitHub contributors and thousands of



<https://zenodo.org/record/3332807>



Thanks to our community of contributors & users!

Open source infrastructure

📁 .github	Remove prettier configuration	last month
📁 book	minor update	5 days ago
📁 communications	Fix typos	14 days ago
📁 conferences	Add KW formatting pedantry	last month
📁 project_management	Update online-collaboration-cafe.md	14 days ago
📁 templates	Updating Github templates	11 months ago
📁 tests	Add "et cetera" as a deprecated Latinism	6 days ago
📁 workshops	Remove mis-pasted text	13 days ago
📄 .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/the-turing-way/the-turing-way>

Documentation

Chapter proposal: Open Infrastructure #2337

[Open](#) [13 tasks](#) [lolog opened this issue on 28 Apr · 13 comments · May be fixed by #2407](#)



lolog commented on 28 Apr · edited ·

Contributor

There is an interest to branch our communities by developing a chapter for **Open Infrastructures** for research. This chapter would set the context and provide a vision for how to evaluate tools and platforms with a Turing Way perspective on reproducibility, ethical alternatives and collaboration in practice.

We should start by defining "open infrastructure", e.g. as a term that encompasses a wide range of practices for providing and decentralising access to resources and knowledge that is essential to sustain online research and other forms of digital collaboration. The chapter should contrast cloud computing or infrastructure-as-a-service with under-the-desk hardware, address some of the risks of bringing your own device to reproducibility, provide some tips about negotiating and partnering with the IT departments of your institute or institution, and most importantly explain how to properly evaluate and document the infrastructure of a scientific effort.

Context

There have been a number of discussions of the term in this project already, notably in the context of [Binder project](#), and most recently in a call with [@aleesteale](#) at a [Frictionless Data](#) meetup organised by [@sapetti9](#).

Some relevant content already exists in the [Guide for Reproducible Research](#) (where this chapter would seem to most likely fit), the [Guide for Collaboration](#) (notably in the coverage of GitHub as an open platform, and shared ownership of open source projects), and [Research Infrastructure Roles](#) (mentioning the architectural and engineering work involved).

Working across various levels of abstraction - from programming languages and package landscapes of R, Python, Julia, to standards focused groups like the ones behind [Data Packages](#) - to more specific projects like [Jupyter](#), [LiveMint](#) or [Docker](#), we can appreciate how critical guidance on solid principles of infrastructure (software / hardware / cloud) can be to open research projects and open data publication. Let us start a [Discussion](#), schedule a call, and go from there.

Resources

- ☐ [Tools, practices and systems](#) group at Alan Turing Institute
- ☐ [Reproducible Computational Environments Using Containers](#) (Carpentries)
- ☐ [Bring Your Own Device](#) (privacyrights.org) debate
- ☐ [Open Textbook](#) covers issues in the business world
- ☐ <https://ethical.net/> + <https://alternativeto.net/> + <https://www.openhub.net/> +++

Who can help?

- [@lolog](#) - software engineering background with some science lab support experience, plus I know a few things about what it takes to write a [good handbook](#) - this would be my first contribution to the Turing Way, and I would be happy to spend a bit of time to brainstorm, research and collaborate on this with you folks here;

Updates

- ☐ Write chapter outline
- ☐ Add material to the chapter
- ☐ Combine materials into a readable chapter
- ☐ Proofread
- ☐ Request reviews
- ☐ Address reviews
- ☐ Merge to main branch.
- ☐ [Add to Wikipedia](#)

Assignees

No one—assign yourself

Labels

[idea-for-discussion](#)

Projects

[The Turing Way Project Management](#)
Status: Chapters

Milestone

No milestone

Development

Successfully merging a pull request may close this issue.

[11 \[WIP\] Write Open Infrastructure chapter](#)
[JimCircadian/the-turing-way](#)

Notifications

[Unsubscribe](#)

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The Turing Way

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Welcome

[Guide for Reproducible Research](#)

[Guide for Project Design](#)

[Guide for Communication](#)

[Guide for Collaboration](#)

[Guide for Ethical Research](#)

Community Handbook

[Code of Conduct](#)

[Style Guide](#)

[Maintaining Consistency](#)

[Contributing and Developing](#)

[Chapters - Templates and Workflow](#)

[Acknowledging Contributors](#)

[Monthly Newsletters](#)

Community Handbook

This is a community handbook that discusses aspects of The Turing Way project that one can use for participating in this community.

The Turing Way is a community-led book project that involves diverse perspectives of researchers, funders, educators, learners and various stakeholders from around the world.

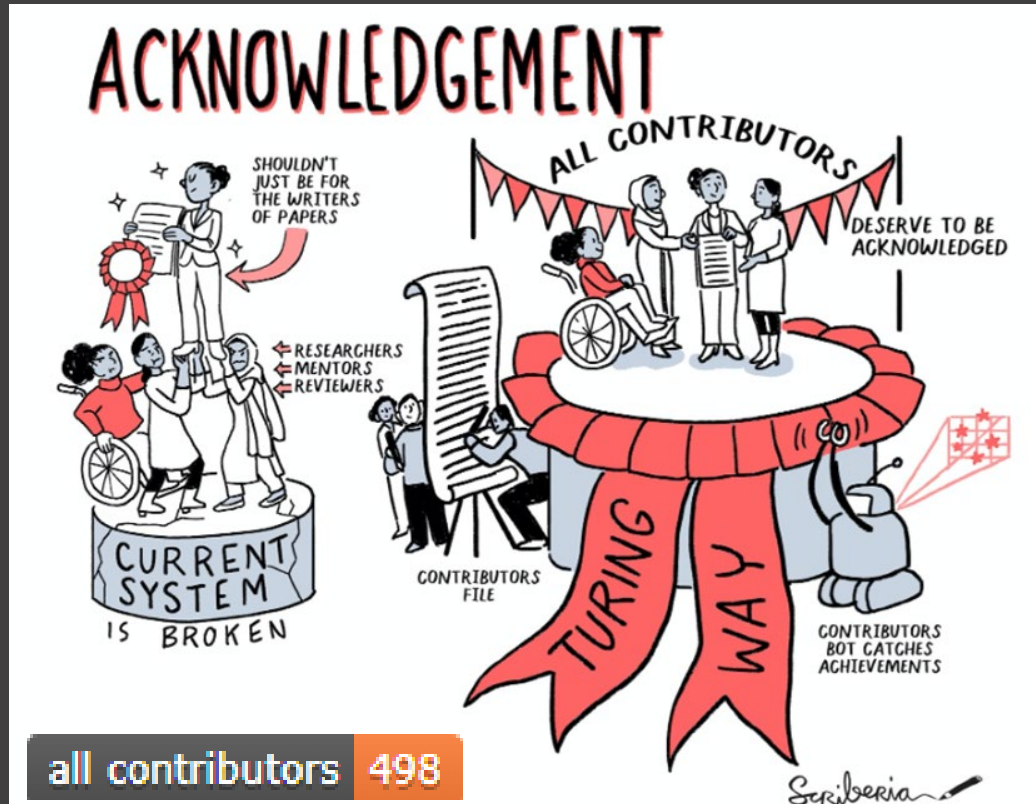
The Community Handbook part of this book aims to provide information about the project, ways of working, and other aspects that can make community participation equitable for our members.

We are incredibly grateful to our community members who are the readers, co-authors, contributors, collaborators, maintainers, helper and supporters.

Thank you for joining the incredible journey of *The Turing Way*!



Recognition



Record of Contributions

Personal Highlights from *The Turing Way* Contributors

A

Achintya Rao

Alejandro Coca

Alexander Morley

Andrea Sanchez Tapia

Andreea Avramescu

Ankur Kumar

Anna Krystalli

Arielle Bennett

Collaborating Organisations and Projects

Delft University of
Technology - Faculty of
Applied Sciences
Netherlands eScience
Center
FAIR Cookbook
Open Life Science
Remote Computational
Project Resource

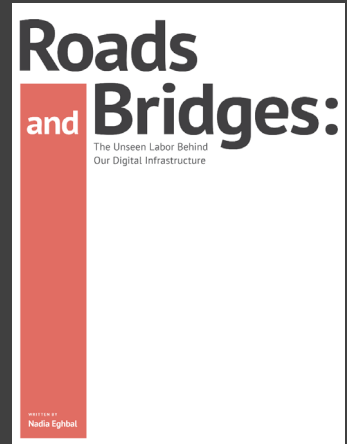
Cite as: *The Turing Way Community*. (2021). *The Turing Way: A handbook for reproducible, ethical and collaborative research* (1.0.1). Zenodo. <https://doi.org/10.5281/zenodo.5671094>

Formalising Research Infrastructure Roles

These roles carry out essential “glue work” of translating knowledge effectively by

- involving diverse members through collaboration
- promoting equitable, fair and ethical practices in research
- identifying gaps or challenges as well as ways to fix them

When formalised and rewarded, people’s skills and contributions in research through traditionally invisible/hidden/undervalued work becomes valuable and recognisable by the system.



Stengers Isabelle., Another Science is Possible: A Manifesto for Slow Science. Polity Press (2016). | Eghbal.. N., “Roads and Bridges: The Unseen Labor Behind Our Digital Infrastructure. Ford Foundation (2016). | Olson, D., Meyerson, J., Parsons, M., Castro, J., Lassere, M., Wright, D., ... Acker, A.. *Information Maintenance as a Practice of Care*. <https://doi.org/10.5281/zenodo.3236409>. (2019)

Research Infrastructure Roles ^

Community Managers

Overview

Data Stewards Overview

Data Steward Personal Story

Data Wrangler Overview

Research Software Engineers
Overview

Research Software
Engineering Personal Story

Research Application
Manager Overview

Research Infrastructure
Developer Overview

Remote Collaboration ✓

Shared Ownership in Open
Source Projects ✓

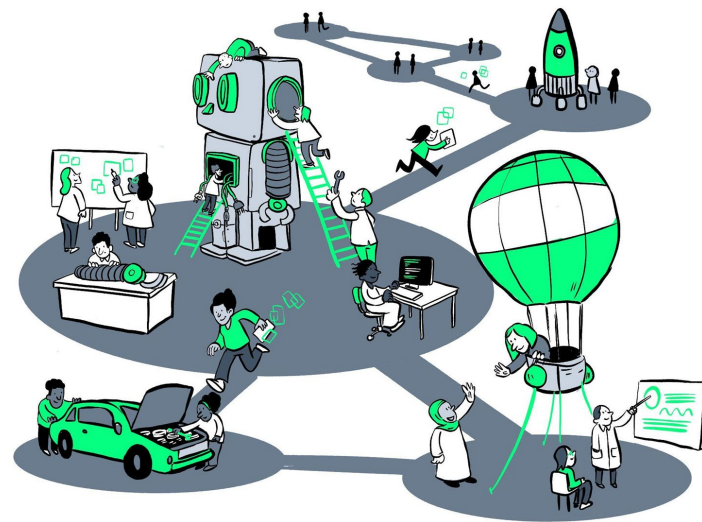
Guide for Ethical Research ✓

Community Handbook ✓

Examples of Research Infrastructure Roles

This initial list of examples of Research Infrastructure Roles that has been expanded as part of *The Turing Way* Hackathon Workshop at the [Big Team Science conference 2022](#).

- Community manager
- Project manager
- Research software engineer
- Research application manager
- Programme manager
- Data steward
- Data wrangler
- Research infrastructure developer
- Partnerships development manager
- Grant application manager
- Community engagement lead
- Librarian
- Communications manager
- Events manager
- Participatory research manager



Policies / Guidelines for Open Leadership

Recognising all kinds of roles through recommendations & policies.

UK Research and Development Roadmap

Attract, retain, develop the talented, diverse people and teams. Ensure that our science, research, innovation system is responsive to our society

Towards better recognition for Research Infrastructure Specialists (Australia)

Professional staff become more valuable with experience and need to be rewarded as such – otherwise they will go elsewhere. Australian universities need to improve how they reward and recognise this important cohort of specialists, and the NCRIS Project Directors are calling for a change in how [Research Infrastructure] specialists are classified.

<https://www.gov.uk/government/publications/uk-research-and-development-roadmap> - UK Reference, <https://anff.org.au/news/towards-better-recognition-for-research-infrastructure-specialists> - Australia Reference



Broader Recognition for Research Infrastructure Roles

- **The Turing Way Practitioners Hub** in close collaboration with UK orgs (government, industry, public sector)
- **The Turing's Skill Policy Award** for engaging with policy ecosystem - led by **Dr. Emma Karoune**



Case study: Turing data science team

Karoune, E., &
Sharan, M. (2024).
Data Science Team
Personas: case
study from The Alan
Turing Institute.
Zenodo.

<https://doi.org/10.5281/zenodo.1165899>
[4](#)



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Alan Turing
Institute

Data Science Team Personas: case study from The Alan Turing Institute

Authors: Emma Karoune & Malvika Sharan

Contributors (alphabetical order by last name):

Mhairi Aitken, Batool Almarzouq, Alexandra Araujo Alvarez, Sophia Batchelor, Arielle Bennett, Chris Burr, Alden Conner, Eric Daub, Jennifer Ding, Claudia Fischer, Matt Forshaw, Carlos Gavidia, James Geddes, Bastian Greshake Tzovaras, Rachel Hilliam, Jim Madge, Annie Mallon, Aida Mehonic, Martin O'Reilly, Jessie Pearce, Luis Santos, David Sarmiento Perez, Rachael Stickland, Kirstie Whitaker

26 July 2024

The Alan Turing Institute, the UK's National Institute for Data Science and AI, was founded in 2015 with a clear mission: 'To make great leaps in the development and use of data science and artificial intelligence (AI) in order to change the world for the better'¹. The Turing's goals

- Project/Programme Managers

Turing's teams

Podcast -

<https://www.buzzsprout.com/1326658/14761258>

Research Community Management



- Skills framework
- Case studies

Professionalising Community Management Roles in Interdisciplinary Research Projects

Malvika Sharan^{1, 2, *}, Emma Karoune¹, Vicky Hellon¹, Cassandra Gould Van Praag¹, Gabin Kayumbi¹, Arielle Bennett¹, Alexandra Araujo Alvarez¹, Anne Lee Steele¹, Sophia Batchelor¹, Arron Lacey^{1, 3}, Kirstie Whitaker^{1, §}

Abstract

In this article we discuss community management in interdisciplinary research teams, focusing on recognising and professionalising roles referred to here as the Research Community Managers (RCM). Drawing insights and examples from research and data science projects, we discuss how RCM roles address some of the research's most pressing challenges, from promoting best practices for open research and reproducibility to engaging diverse stakeholders in community-led research and ensuring fair recognition for their contributions. We offer a Community Maturation Indicator and share examples of projects from The Alan Turing Institute, the UK's national institute for data science and Artificial Intelligence (AI), where institutionally supported RCM roles were established.

With the aim to integrate RCM expertise in teams involved in data science and AI research, we provide an RCM Skills and Competencies Framework. We also propose a roadmap for professionalising RCM roles by improving recognition and rewards, potential career paths and organisational support structures. To systematically sustain and progress these roles, we recommend institutional investment in establishing RCM teams that are empowered to prioritise collaboration, transparency and community-based approaches in interdisciplinary projects, such as in data science and AI. As a team, RCMs are well placed to connect disparate teams, initiatives and resources across the organisation, building more resilient research communities that can achieve greater innovation, improved project outcomes and a strongly connected ecosystem, with impacts extending beyond their narrow contexts.

<https://doi.org/10.48550/arXiv.2409.00108>

People in Data

Our 3yr programme aims to convene an open community of data professionals, which promotes a culture that values and prioritises data and recognises people that work in data roles as essential to research.

We need you!

- Are you a **data steward**, **data wrangler**, **researcher** that works with data?
- **Come join us!**
 - Take our survey, connect with us and connect us with your communities.



Webpage



**Contact form
& Survey**

Funded by UKRI/EPSRC Research Technical Professionals scheme and led by the Turing's Data for Research, Research Community Management and Skills Team's.

Connecting with *The Turing Way* Project

- *Collaboration Cafes*
 - 1st & 3rd Wednesdays (15:00 UTC)
- *Fireside Chats*
 - Usually monthly
- *More ways to connect*
 - Join our slack workspace
 - Sign up to our newsletter



<https://the-turing-way.start.page/>



Acknowledgements:

- The Turing Way team, Kirstie Whitaker, Malvika Sharan, Anne Lee Steele, Alexandra Araujo Alvarez
- *The Turing Way* community, contributors & collaborators
- Book: the-turing-way.netlify.com
- Twitter: twitter.com/turingway
- Newsletter: tinyletter.com/TuringWay
- Slack: tinyurl.com/jointuringwayslack
- GitHub: github.com/alan-turing-institute/the-turing-way
- Original artwork by Scriberia: <https://doi.org/10.5281/zenodo.3332807>