

The
Alan Turing
Institute

TRIC-DT Innovation and Impact Hub

Dr Cassandra Gould van Praag (she/her)



digital twins

00

vision

01

activities

02

in practice

03

00

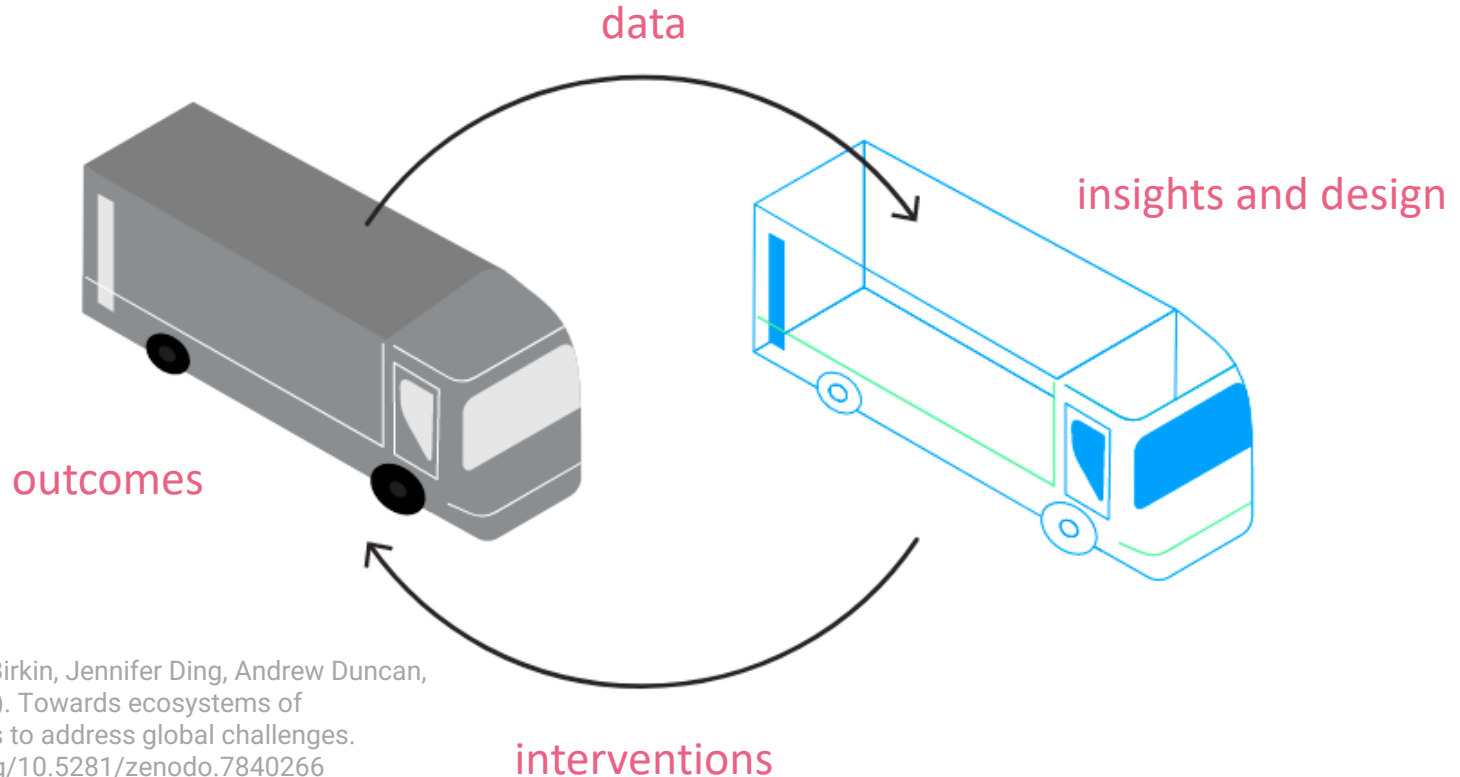
digital twins

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physical twin

digital twin



Hayley Bennett, Mark Birkin, Jennifer Ding, Andrew Duncan,
& Zeynep Engin. (2023). Towards ecosystems of
connected digital twins to address global challenges.
Zenodo. <https://doi.org/10.5281/zenodo.7840266>

01

vision

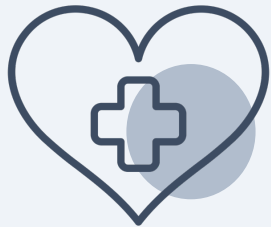
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DSS / Giuseppe Donatiello

Turing Research and Innovation Cluster in Digital Twins

Natural Environment | Health | Infrastructure



*Democratising access to
digital twin technology by
providing open and reproducible
tools*, developed by, with and
for our community.*

**computational and social*

Innovation and Impact Hub



Building a **Multidisciplinary Community of Practice**

Supporting, developing and sharing **best practice for *reproducible, ethical and collaborative data science***

Professional research infrastructure team:

- *Senior Research Community Manager*
- *Research Application Manager*
- *Data Ethics and Privacy Officer*

Natural Environment



Professor Kirstine Dale
Met Office



Dr Scott Hosking
British Antarctic Survey

Health



Professor Ben MacArthur
University of Southampton



Professor Steven Niederer
King's College London

Infrastructure



Professor Keith Worden
University of Sheffield



Professor David Wagg
University of Sheffield

TRIC-DT Hub



Dr Christopher Burr
Alan Turing Institute



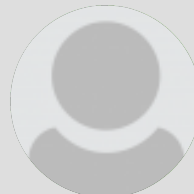
Dr Cass Gould van Praag
Alan Turing Institute



Dr Kalle Westerling
Alan Turing Institute



RAM #2
Alan Turing Institute



Data Ethics
Alan Turing Institute

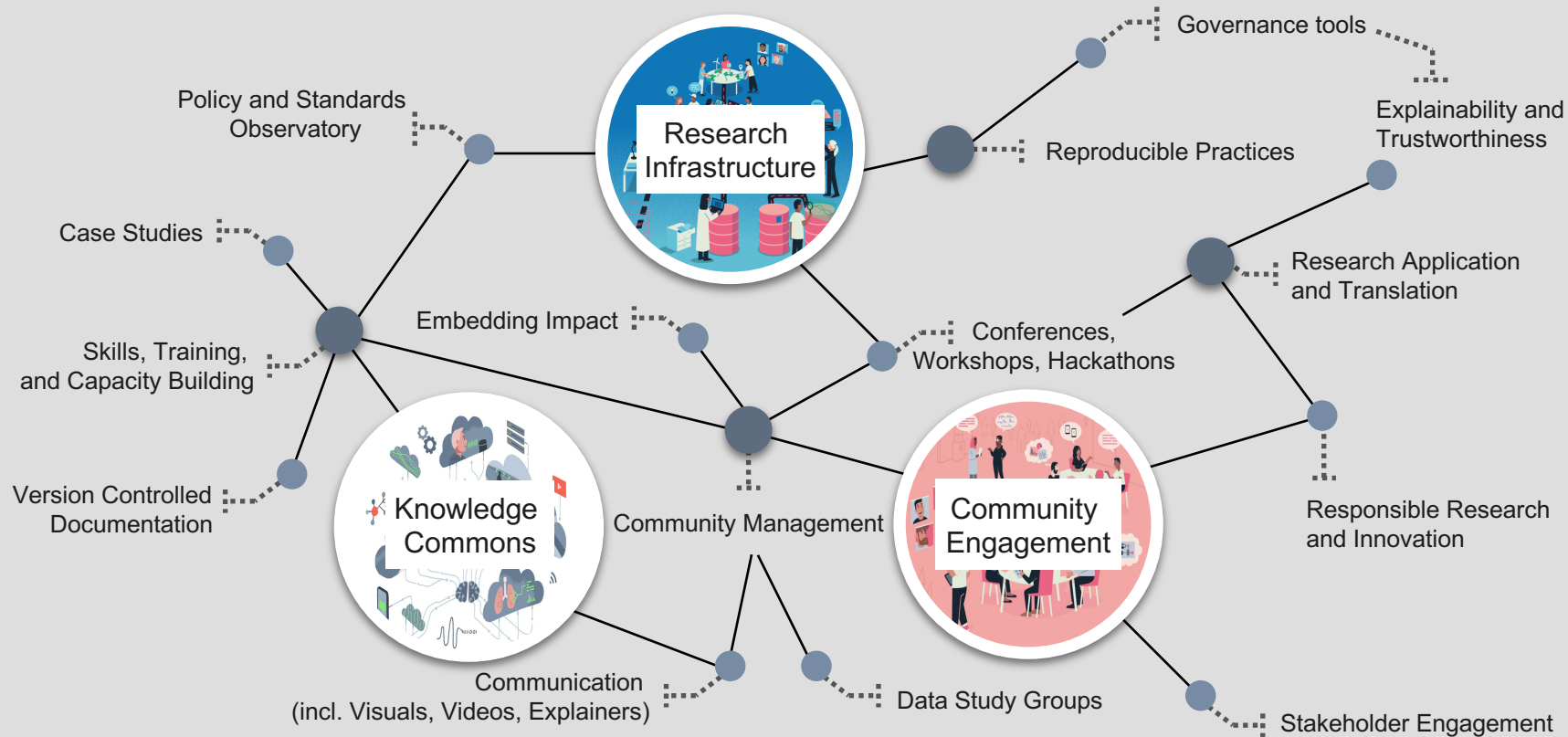
*All part of ATI Tools,
Practices and
Systems (TPS)
Programme*

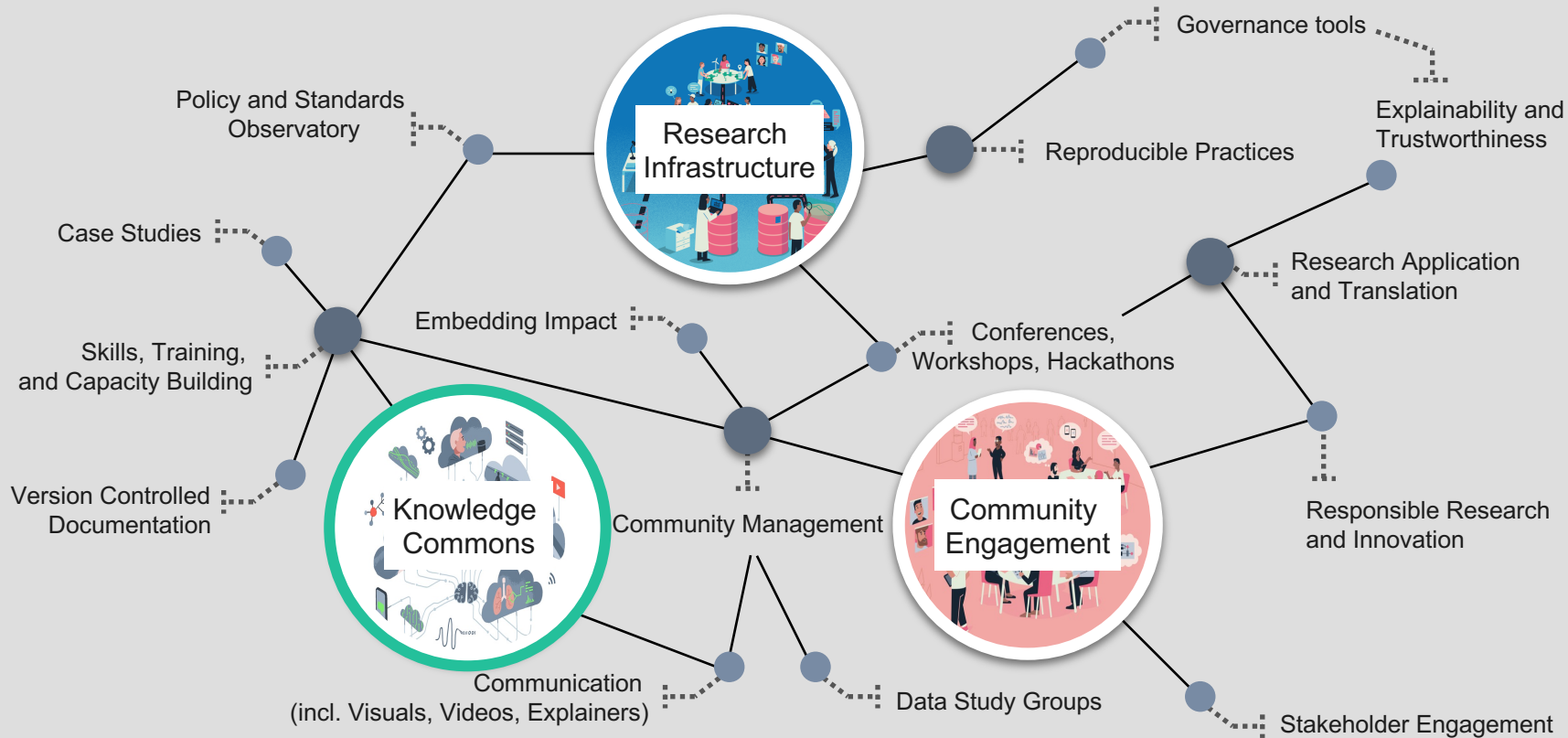
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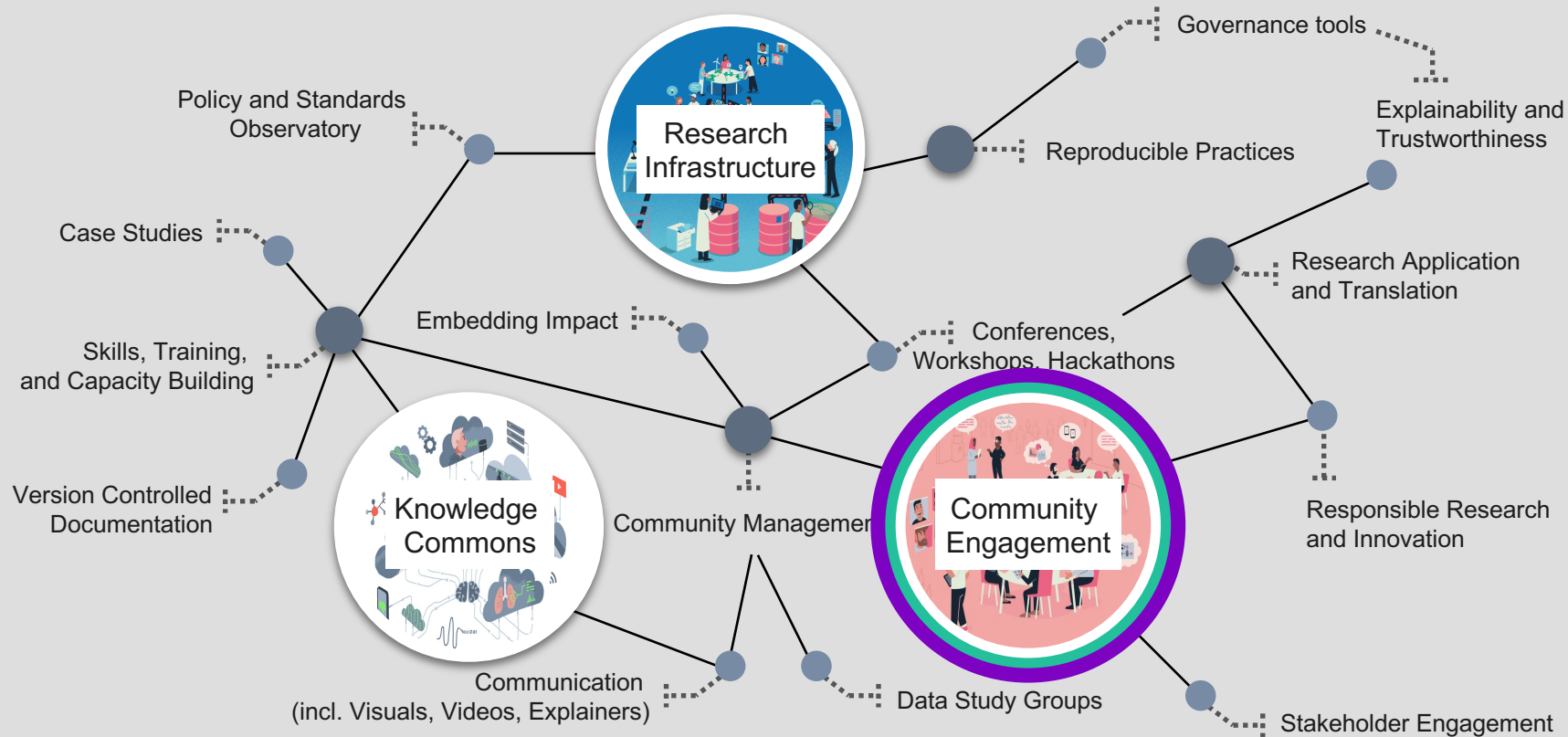
activities

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...developed by, with and for our community

03

in practice

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Dave W, Google images



Burr, C., & Powell, R., CC-BY-SA-4.0 10.5281/zenodo.7107200

Crop Research Observation Platform (CROP)

- Underground farm in Clapham (Turing & Cambridge)
- Real-time sensing of nutrients, water, lights, heat, CO₂, airflow, humidity
- Digital twin monitors, learns, and forecasts information to optimise performance of the physical twin

Nick Barlow
Ruchi Choudhary
Mark Girolami
Alastair Gregory
Markus Hauru

Melanie Jans-Singh
Tomas Lazauskas
Camila Rangel
Flora Roumpani
David Salvador Jasin

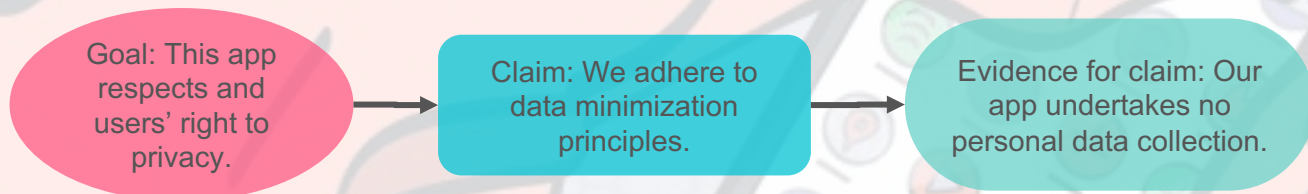
Martin Stoffel
Rebecca Ward
Pat Wichitwechkarn
Zack Xuereb-Conti
May Yong

TRIC-DT Hub

- Testing community appetite for a generalisable DT code base
- Supporting connection with the next industrial application

Trustworthy and Ethical Assurance (TEA)

- A tool for developing structured arguments to review and contest claims about the ethical properties of a technology
- Operationalising SAFE-D principles: Sustainability; Accountability; Fairness; Explainability; Data Stewardship



TRIC-DT Hub

Christopher Burr
Rosamund Powell

- Opening up for community contributions, case studies and governance
- Developing features based on community need



Scriberia

Road to Reproducibility. The Turing Way project illustration by Scriberia. CC-BY 4.0 10.5281/zenodo.3332807.

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Welcome — The Turing Way

https://the-turing-way.netlify.app/index.html

Welcome

Welcome to *The Turing Way* handbook to reproducible, ethical and collaborative data science.

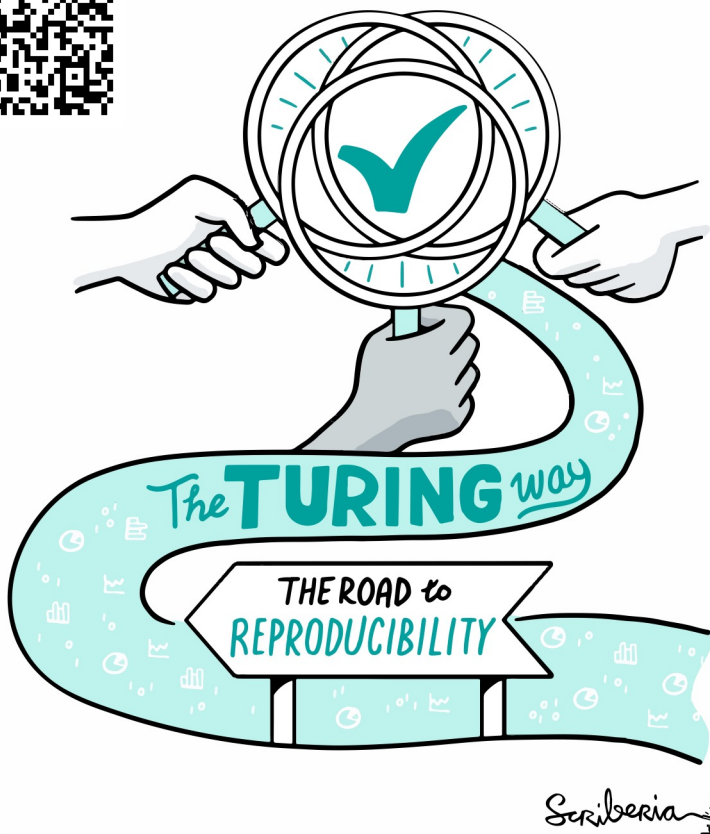
The Turing Way project is open source, open collaboration, and community-driven. We involve and support a diverse community of contributors to make data science accessible, comprehensible and effective for everyone. Our goal is to provide all the information that researchers and data scientists in academia, industry and the public sector need to ensure that the projects they work on are easy to reproduce and reuse.

Top Tip

The Turing Way is not meant to be read from start to finish. Start with a concept, tool or method that you need now, in your current work. Browse the different guides that make up the book, or use the search box to search for whatever you would like to learn about first.

All stakeholders, including researchers, software engineers, project leaders and funding teams, are encouraged to use *The Turing Way* to understand their roles and responsibility of reproducibility in data science. You can inspect our resources on [GitHub](#), contribute to the project as described in our [contribution guidelines](#) and re-use all materials (see the [License](#)).

Please [join our Slack Workspace](#) to connect and discuss your ideas or suggestions with *The Turing Way* members.



Road to Reproducibility. The Turing Way project illustration by Scriberia. CC-BY 4.0 10.5281/zenodo.3332807.

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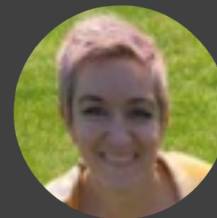
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