

Reflections on cross-cutting software tools born out of project work

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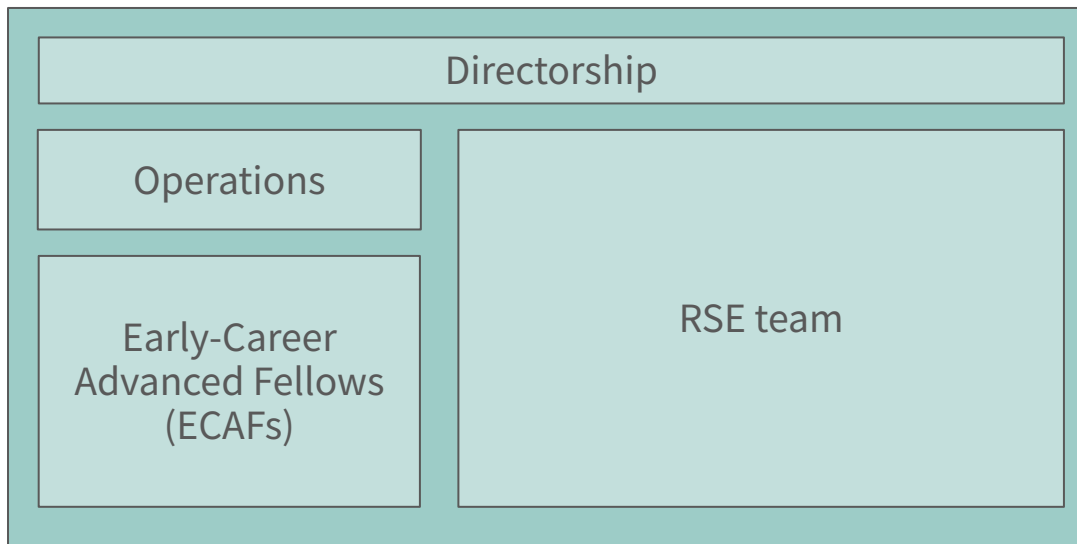


Institute of
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Schmidt Sciences

RSECon 2025

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One of four [Virtual Institute for Scientific Software \(VISS\)](#) centres.

How we work with partners



- Partners
 - [Virtual Earth Systems Research Institute \(VESRI\)](#) projects
 - [Inigo Insurance](#) / InSPIRe
 - And others
- Resource Allocation process

Finding the cross-cutting issue

Our story



FTorch repo



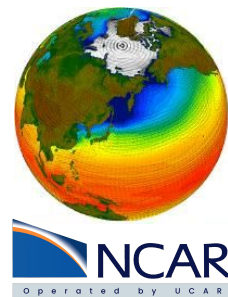
PyTorch-based
machine
learning tools



Fortran-based
Earth System
Models

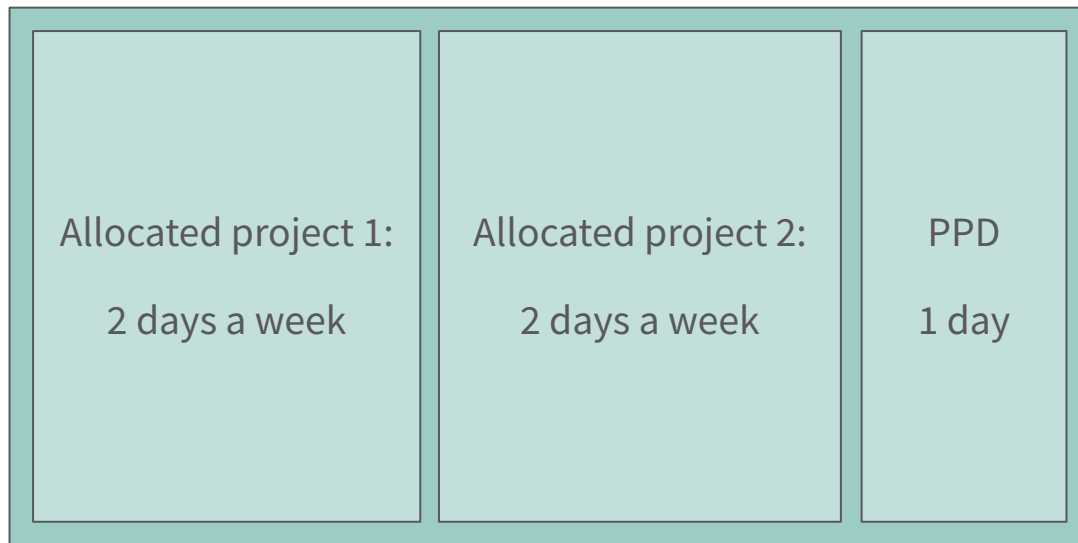
See [slides](#) from a recent seminar for technical details.

Our story



Finding resources

Finding developer time



Visiting students /
interns

Finding funding



Institute of
Computing for
Climate Science

6 months developer time for
FTorch online training



Cambridge Centre for
Data-Driven Discovery

Compute resources

Funding for research visits

Funding to host a
workshop on ML coupling

Finding new users

Things you can do

- Up-to-date, extensive documentation/website
- Wide variety of examples
- JOSS paper
- Regular training events with recordings and slides
 - ICCS summer school
 - Research visits
 - Conferences



FTorch website



FTorch JOSS paper

People you can talk to

- **Researchers/RSEs** in other departments (e.g., seminars)
- **Potential external users** (e.g., seminars, research visits, conference talks)
- **Potential organisational users** (e.g., operational centres)
 - What are their requirements?
 - Offer to help integrate tools (e.g., hackathons)
- **Get involved** in parent communities (e.g., Fortran, PyTorch)

Summary

Key considerations

- **Finding the cross-cutting issue**
 - Are there common requests your team receives?
 - Does your community lack access to some useful technology?
- **Finding resources**
 - Is there an enabling technology that you could secure funding to implement? Is there an AI angle?
 - Could you lean on the *R* rather than *SE*?
 - Do you have interesting problems for a visiting student or intern?
- **Finding new users**
 - Who are you not reaching inside/outside your organisation?
 - Which organisations might benefit from your software? What are their requirements? Could you assist them?
 - Are there relevant parent communities you could get involved with?

Acknowledgements

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Thanks for listening

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