



NEW WAYS TO DEAL WITH

an example of the Informatics Lab

DR NIALL ROBINSON
DEPUTY HEAD

niall.robinson@informaticslab.co.uk

with thanks to the rest of the Informatics Lab

1. WHAT'S THE MET OFFICE?





Met Office



Flood

forecasting

CRAY

CRAY

CRAY

CRAY

Resilience

CRAY



WE'RE ROUTINELY SENDING DATA TO THE CLOUD



2. THE INFORMATICS LAB





SCIENCE

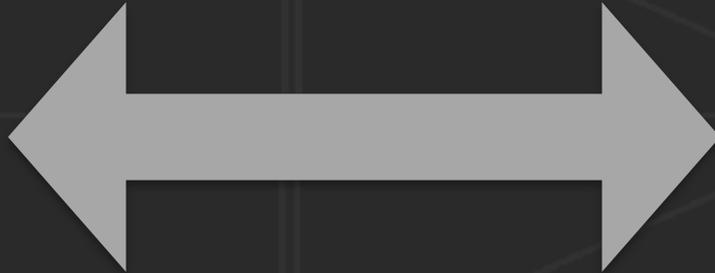


TECHNOLOGY



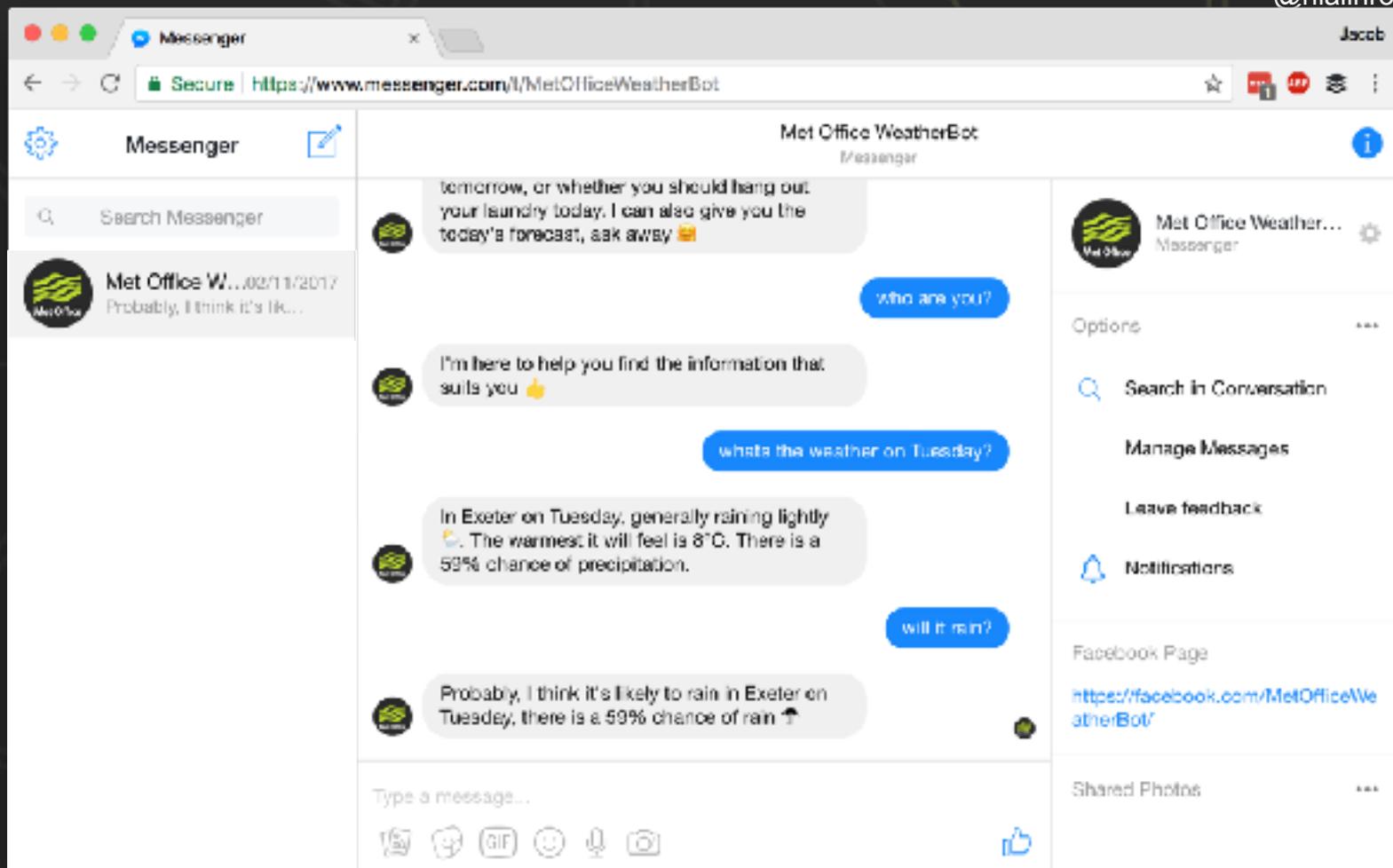
DESIGN

**All our projects sit somewhere on
the hammer-nail continuum...**



**...that way we can hit the right
nails with the right hammers**





The screenshot shows a web browser window with the URL <https://www.messenger.com/l/MetOfficeWeatherBot>. The chat interface is for the 'Met Office WeatherBot' on Messenger. The chat history includes:

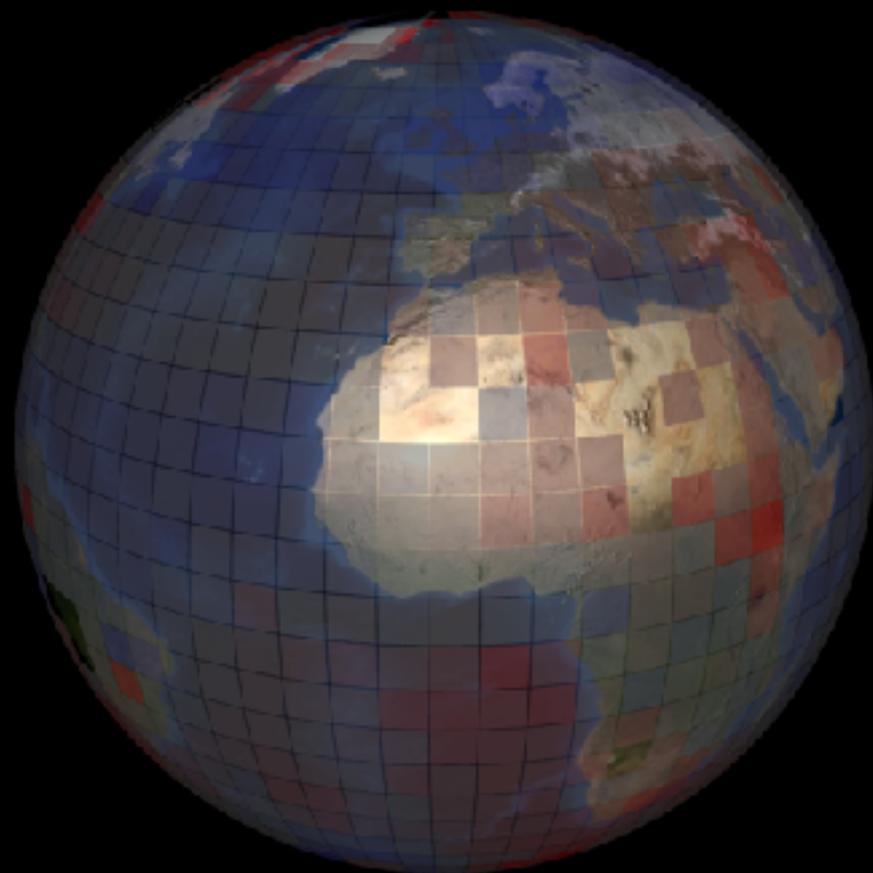
- Bot: tomorrow, or whether you should hang out your laundry today. I can also give you the today's forecast, ask away 🗨️
- User: who are you?
- Bot: I'm here to help you find the information that suits you 👍
- User: whats the weather on tuesday?
- Bot: In Exeter on Tuesday, generally raining lightly ☁️. The warmest it will feel is 8°C. There is a 59% chance of precipitation.
- User: will it rain?
- Bot: Probably, I think it's likely to rain in Exeter on Tuesday, there is a 59% chance of rain ⬆️

The right-hand sidebar contains the following options:

- Options
- Search in Conversation
- Manage Messages
- Leave feedback
- Notifications
- Facebook Page: <https://facebook.com/MetOfficeWeatherBot/>
- Shared Photos

At the bottom, there is a text input field labeled 'Type a message...' and a row of icons for attachments, voice, GIFs, emojis, microphone, and camera.

Late 20th century warming
begins as Pacific Decadal
Oscillation shifts into its positive
phase and CO₂ rises



1986



0.053

0.60

imp. difference (°C)
from 1961-1990
average

11.5/2010

Show instructions



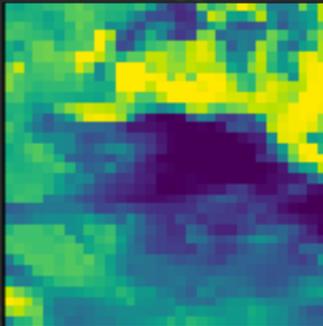
- 
Olle @olle03038423 · Mar 2
 #3wordweather light blowing snow stafford
- 
J @Ericaraj · Mar 4
 #3wordweather dusky, foggy and still in Cakhem, Rutland
- 
Susan Lees @susan_edmonds · Mar 3
 #3wordweather
 My words are "deep crisp unover"
 Victoria Park Cardiff
- 
Michelle Bruce @michelebruce · Mar 2
 #3wordweather cold, bitter, ice
- 
Welford Weather @WelfordWeather · Mar 2
 #3wordweather snowy, cold, windy Stratford-upon-Avon
- 
cha crookes @ChaeCrookes · Mar 2
 Snowing small flakes Donfield #3wordweather
- 
Phil McNeil @redplease · Mar 4
 #3wordweather porriolk steady small snowflakes
- 
Richard Johnson @richardpsady · Mar 2
 Replying to @metoffice
 Snowing Cold Freezing Rubery #3WordWather



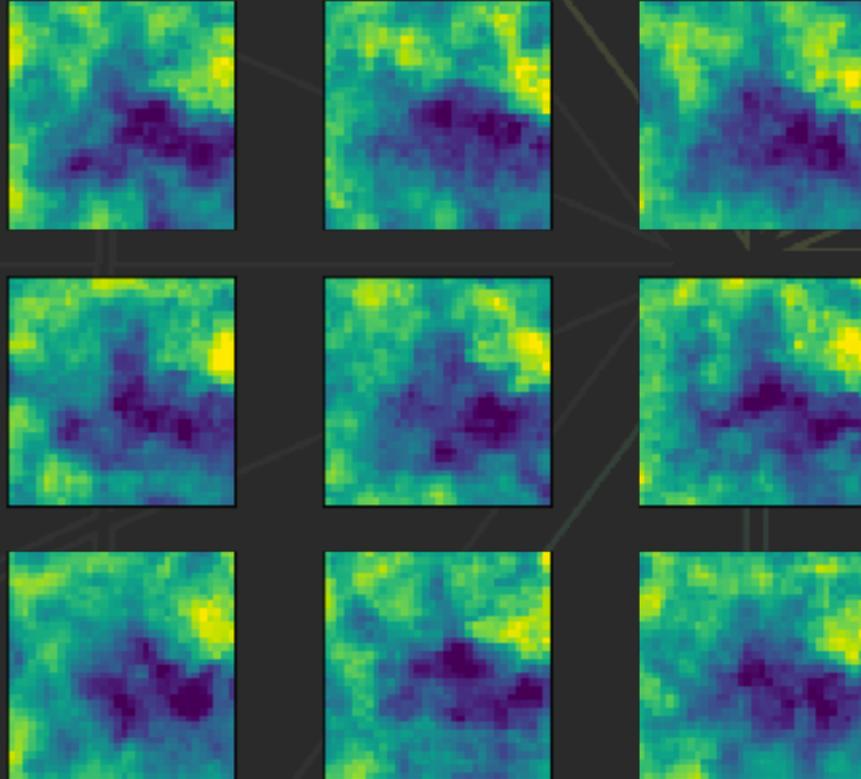
Input



Target



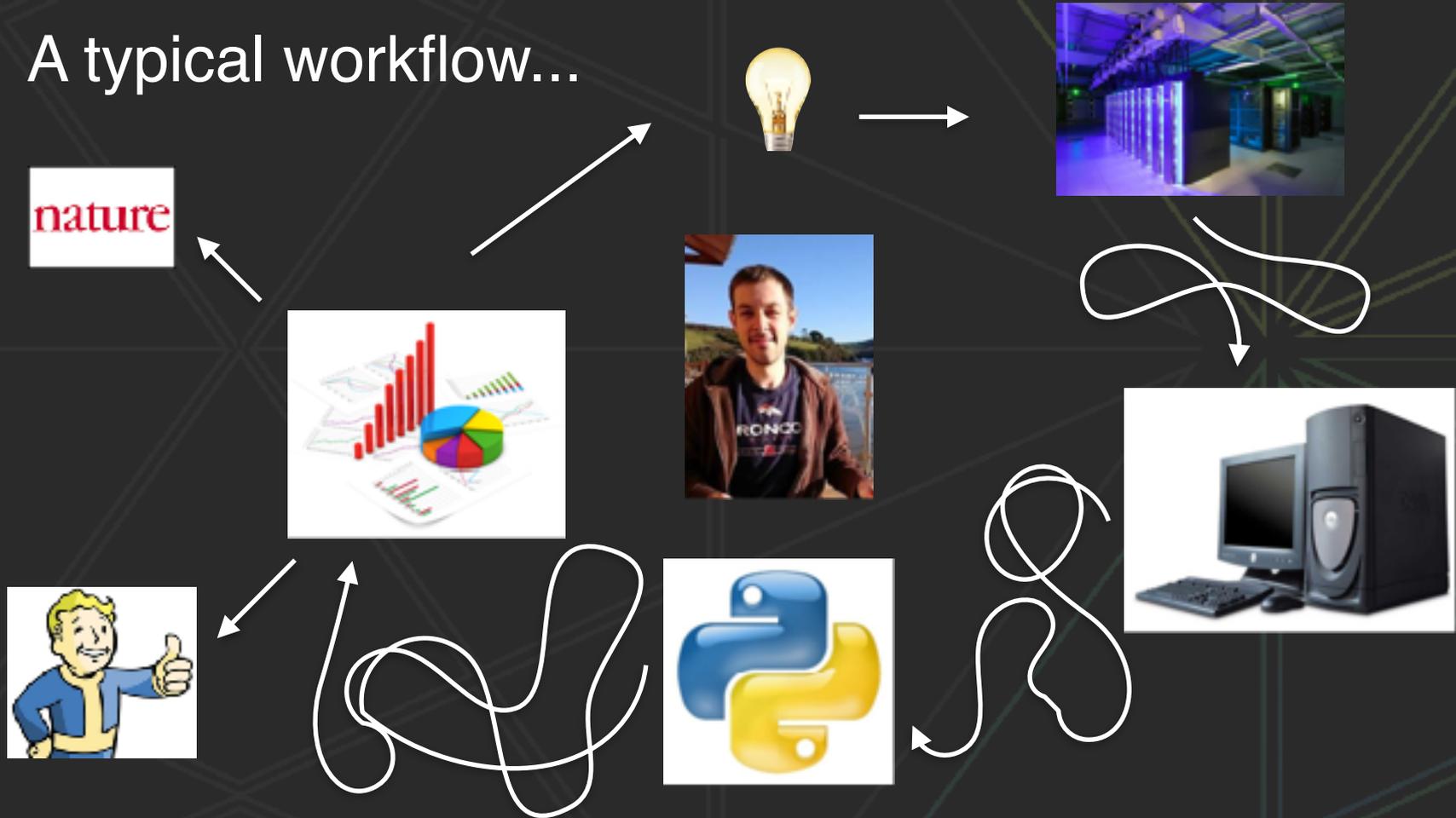
Samples from conditional Gaussian field



3. GIVING ANALYSTS BACK THEIR FLOW

It's not enough to just give people
access to data.

A typical workflow...



So sometimes, we don't look for stuff
we don't expect to see...

...but that's the really interesting stuff



We need to give analysts back their "flow"



PANGEO

A community platform for Big Data geoscience

OUR GOALS

1. Foster collaboration around the open source scientific python ecosystem for ocean / atmosphere / land / climate science.
2. Support the development with domain-specific geoscience packages.
3. Improve scalability of these tools to handle petabyte-scale datasets on HPC and cloud platforms.



=



Iris



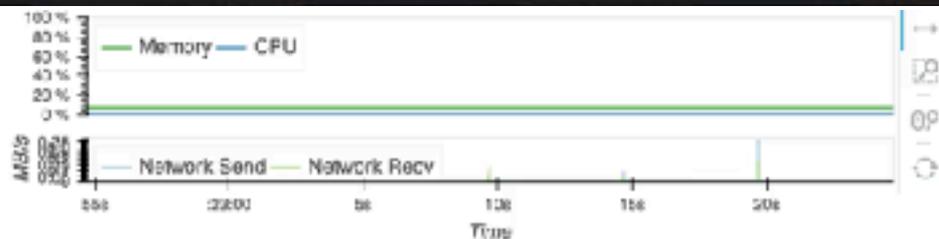
xarray

matplotlib



docker





Memory Use: 0.00 MB

Task Stream



Progress – total: 0, in-memory: 0, processing: 0, waiting: 0, failed: 0



Chat



Type your message...



ADVICE FROM OUR EXPERIENCE

- Prototypes are compelling
- Recognise the value of "shininess"
- Work truly hand-in-hand with other disciplines

Doing new things is hard

There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.

For the reformer has enemies in all those who profit by the old order, and only lukewarm defenders in all those who would profit by the new order, this lukewarmness arising partly from fear of their adversaries (...) and partly from the incredulity of mankind, who do not truly believe in anything new until they have had actual experience of it.

Doing new things is hard (and that's not new)

There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.

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Machiavelli, 1532