# A workflow that most probably isn't yours

Ioannis Kosmidis

Reader in Data Science

The Alan Turing Institute & University of Warwick



# A workflow that most probably isn't yours

#### My workflow principles

design, tools, implementation

## Modern tools and ecosystems prescribe workflows

instead of letting you choose tools that fit the way you like to work

e.g. Outlook calendar invites (email inbox as an agenda), Google calendar (tasks/events)

## Life of an academic

Research (incl software development)

**Proposals** 

Reviews and feedback

Teaching

**Examinations** 

Administration

Advising

Conferences, workshops & seminars

Self-development

Outreach and communication

Relaxation & Reflection

#### Proposals

#### Outreach and communication

Research

Advising

Reviews and feedback

Relaxation & reflection

Self-development



Conferences, workshops & seminars

Teaching

**Examinations** 

Administration

#### Proposals

#### Outreach and communication

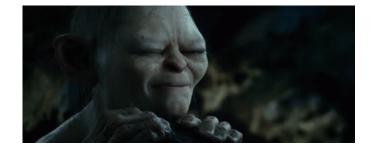
Advising

Research

Reviews and feedback

Relaxation & reflection

Self-development



Conferences, workshops & seminars

Teaching

**Examinations** 

Administration

#### Proposals

#### Outreach and communication

Advising

Research

1

Reviews and feedback

Relaxation & reflection

Self-development



Conferences, workshops & seminars

Teaching

**Examinations** 

Administration

## What does a workflow do?

#### Manage daily input

ideas, notes, meetings, errands, correspondence, hands-on work, breaks, relaxation

#### Handle commitments

collaborations, conference/journal deadlines, editorial work, administration, ...

## Keep track of progress and self-development

progress with project/software/thesis, waiting others to do stuff, self-learning, ...

#### Set goals

short-, mid-, long-term

# Why have it?

- Make time count
- Prioritize and focus
- Form habits
- Minimize stress
- Achieve goals

# Assumptions

Brain's noise-to-signal ratio is high at least higher than one would hope...

Human memory ultimately fails as an agenda

No workflow is good for everybody & forever

personal circumstances & work requirements, different priorities & problem solving strategies

Parsimonious workflows are the best

workflows taking long time to operate, complicated information retrieval, bottlenecks

## Definitions

#### Todo

something that needs completion, you have a plan for e.g. waldi CRAN release, improved estimation in LMM, YRM seminar, kitchen renovation, ...

#### Task

a natural and manageable next step in a todo, best described starting with a verb e.g. write vignette, carry out simulation study, write introduction, buy sink

#### Context

where todo items arise e.g. home, work

# Workflow processes

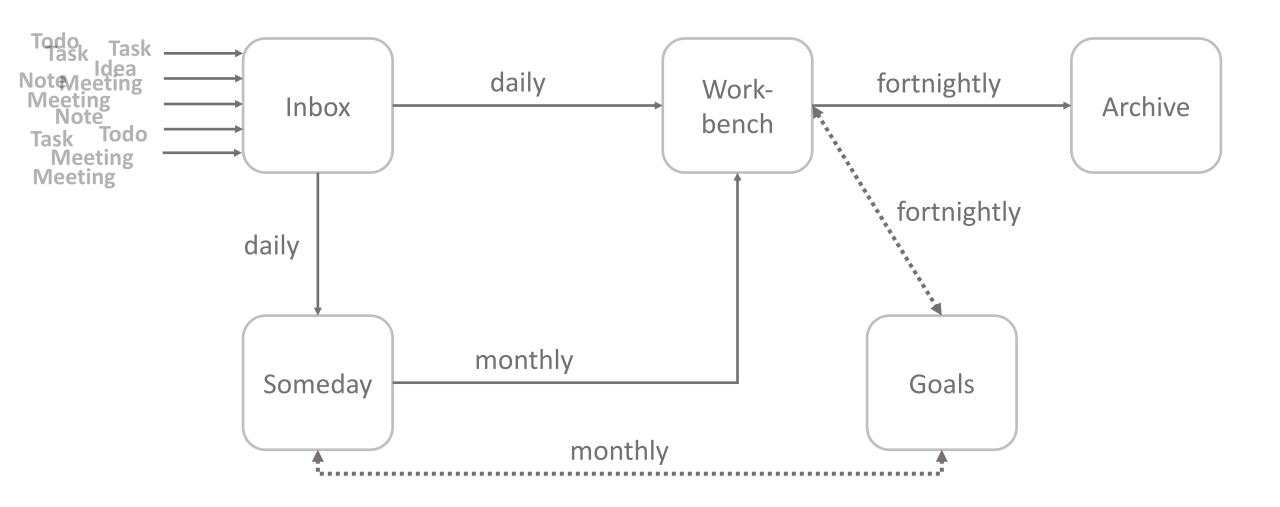
Categorize, refile & retrieve

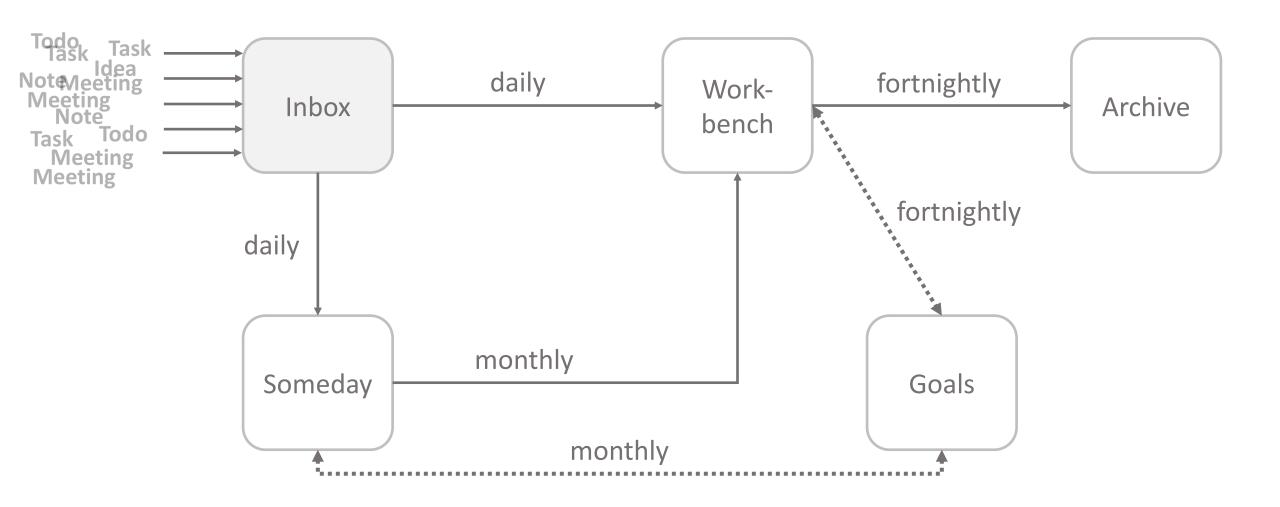
e.g. distinguish between todo types (research, admin) and contexts, etc.

Prioritize

Manage time

**1** Consolidate activity





## Inbox

Collects signal (and noise) from your brain & others

e.g. ideas, tasks, errand, meetings, notes, email, impromptu visits, phone calls, ...

Commit entries to it

during the day

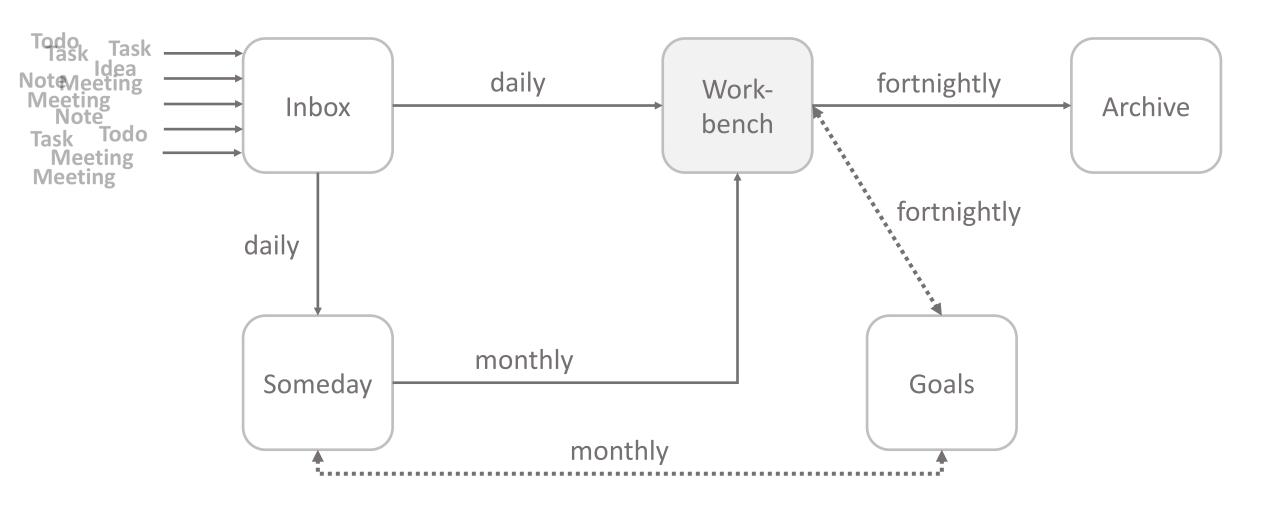
Entries from **inbox** are categorized to **workbench** or **someday** end of the day

Needs to be accessible; not necessarily tidy

```
Tasks

    Meetings

   MEETING with Jake Pegden
                                                                     :meeting:...
   MEETING with Asma
                                                                     :meeting:...
   MEETING with Nicola
                                                                     :meeting: ...
Notes
   NOTE Priorities
                                                                        :note:...
   NOTE Impact evidence and work
                                                                        :note:...
   NEXT Respond to PhD Supervision in Statistics...
   NOTE Principles for PhD supervision
                                                                        :note:...
   NOTE Automatic replies
                                                                        :note:...
   NOTE Warwick-Turing Post advert 2017
                                                                        :note:...
   NOTE House hunting emails
                                                                        :note:...
   NOTE Beta regression references
                                                                        :note:...
   NOTE brglm2 examples
                                                                        :note:...
Ideas
Breaks
   BREAK for lunch
                                                                       :break: ...
● Emails
   NEXT Respond to Re: reference ...
   NEXT
         Respond to Provisional list of roles, green=updated ...
```



## Workbench

Context-specific and dedicated to ongoing projects

Entries from inbox are categorized to workbench daily until project completion, cancellation or abandonment

Entries from **someday** are moved to **workbench** monthly, as necessary

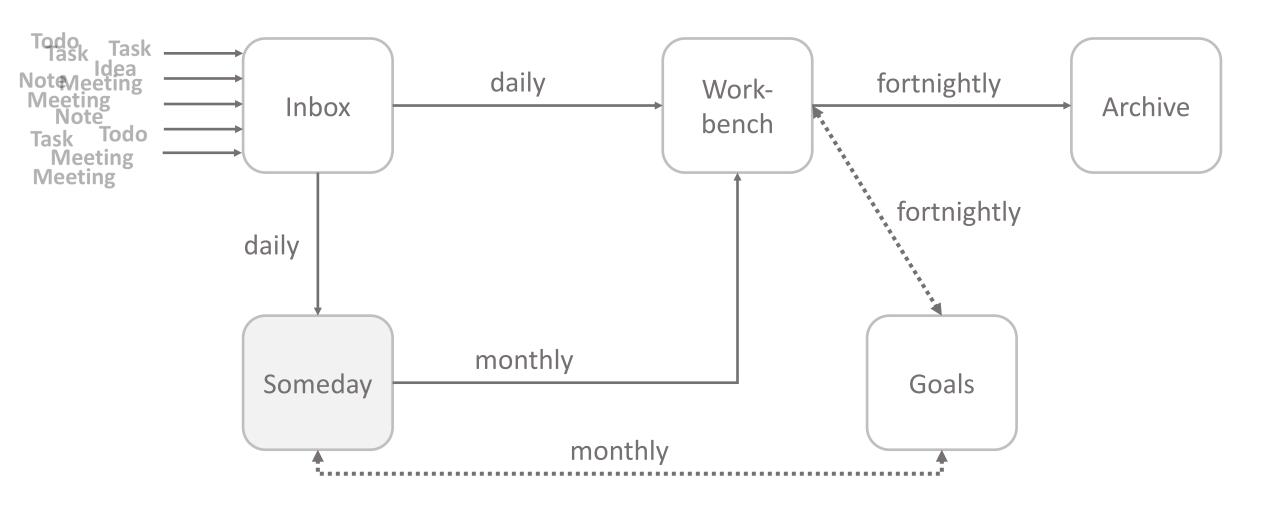
Entries are frozen/cancelled/prioritized according to **goals** fortnightly, as necessary

```
:@work:admin:...
Administration
Advising
                                                               :@work:...
• Reviews and feedback
                                                               :@work:reviewing:...
 Software
                                                               :@work:software:...
Proposals
                                                               :@work:...
 Research
                                                               :@work:research:...
 Teaching
                                                               :@work:teaching:...
 Examinations
                                                               :@work:...
Conferences, workshops and seminars
                                                               :@work:seminars_workshops:
  :PROPERTIES:...
   TODO Seminar series: Algorithms & Computationally Intensive Inference...
   TODO Conference: MathSports International 2019...
0
   TODO Workshop: WHOA-PSI 4...
0
    TODO Conference: useR! 2019...
0
   TODO Talk: Ioannis Kosmidis at YRM seminar...
   TODO Conference: RSS 2019 conference...
   TODO Workshop: Greek Stochastics lambda...
0
   TODO Lunchtime RSE Talks presentation...
   TODO Research visit: University of Toronto...
Ad-hoc meetings
                                                               :@work:...
Relaxation and routine
                                                               :@work:routine:...
Self development...
:@work:comms:...

    ○ Claims....

    Lists....

 Workflow
                                                               :hanging_around:...
```



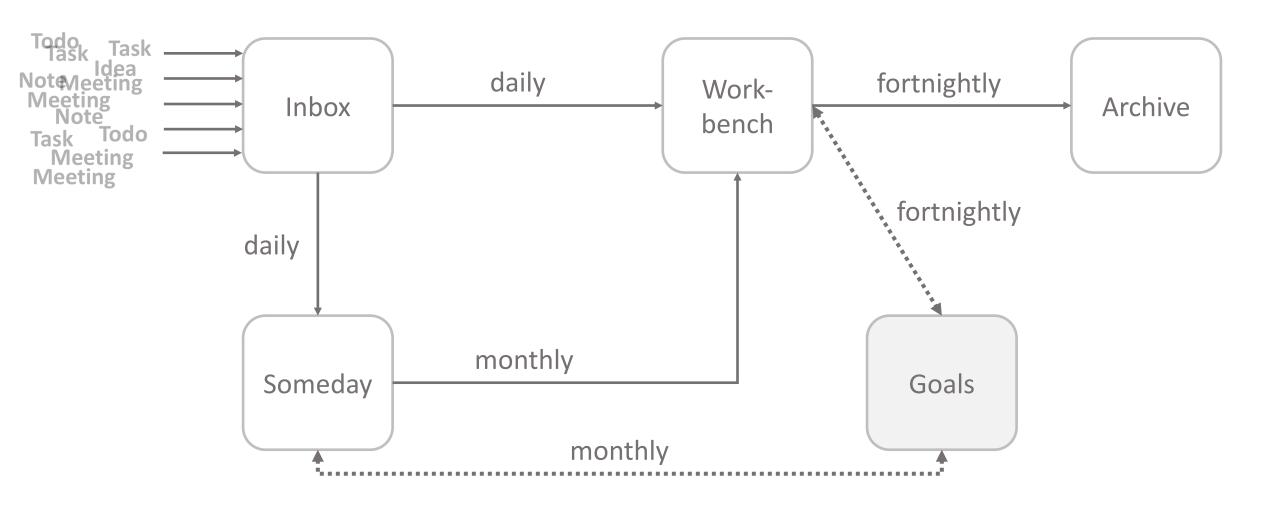
# Someday

Ideas & potential projects
that have not started yet and will not start anytime soon

Entries from **inbox** are categorized to **someday** daily, as necessary

Entries from someday are moved to workbench monthly, as necessary

Entries are reviewed according to goals monthly, as necessary



## Goals

Entries are mid- and long-term goals monthly, annual, 3 years

#### Review fortnightly

freeze/cancel/prioritize entries in workbench

#### Review monthly

move entries from someday to workbench adjust goals, as necessary

## Archive

Completed and cancelled entries are refiled in **archive** fortnightly

Same structure as workbench

Annual archives

# Entry types

## TODO

project, e.g. a provisional paper/R package title, YRM organization

states: INACTIVE, CANCELLED, DONE

## NEXT

next task towards a todo

states: CANCELLED, DONE

## WAITING

for something to happen/somebody to do something, typically towards a todo

# Entry types

## NOTE

something to retrieve later (thought), a resource (e.g. reference, software tool)

## IDEA

e.g. idea for research, a seminar series, a book club, ...
typically it will be labelled as silly, but sometimes it becomes a todo





# Typical workflow hierarchies

TODO IDEA

NEXT NOTE

NOTE IDEA

WAITING WAITING

**MEETING** 

**IDEA** 

**CANCELLED** 

```
* TODO ST329 module 2018-2019
    MEETING Teaching ST329 - Topics in Statistics (R0.04)...
    MEETING Teaching ST329 - Topics in Statistics (MSB0.08)...
    MEETING ST329 revision lecture
                                                                     :meeting:...
    MEETING ST329 exam
                                                                     :meeting:...
    MEETING with Paul on peer observation
                                                                     :meeting:...
    DONE [#A] Fill in Cohort Feedback form for ST329 :@warwick:short_dash:teaching:...
    DONE [#A] Prepare ST329 lecture...
    DONE [#A] Record 2018-2019 dates for ST329...
    DONE [#A] Pop in Student Support to check ST329 exam requirement :errands:...
    DONE [#A] Prepare ST329 exam...
    DONE [#A] Prepare peer-review form for ST329...
    DONE [#A] Collate ST329 exam paper...
    DONE [#A] Moderate st329 exam...
    DONE [#A] Submit st329 exam...
    NOTE about new examination arrangements
                                                                        :note:...
    DONE [#A] Prepare ST329 revision class...
     NEXT [#B] Mark and moderate exams...
    CANCELLED [#A] ST329 solutions...
```

# Timestamping, keeping time and tagging

All my entries are timestamped

for being able to recover project timelines if needed

Keep time for all NEXT and MEETING entries in workbench how much time I spend doing X?

#### Tags

@work, @home, comms, seminar, note, reviewing, software, ...

# Implementation

#### 4 notebooks, 1 agenda, 1 stopwatch

1 notebook for each of inbox, workbench, someday, goals; update agenda daily

#### emacs

org-mode, agenda views, mu4e, workgroups2, helm

Switching between interfaces takes me long, so I learned to use emacs for the majority of things

R and (R-)Markdown (any volunteers to work with me on this?)

workflow as an R package, possibly with an Rstudio plugin

• • •

## Advice

Offload your brain in a trusted system and focus on what is important

Your mail inbox is not a task list an email is not a task; responding/reacting to it is

Teach yourself to speak to yourself
Find the verbs for your tasks

Think of the workflow that suits you and find the tools do not let the tools decide for you

Manage work according to priority and available capacity

## Resources

Org mode and task management systems

Getting Things Done: The Art of Stress-free Productivity, David Allen