Template to prepare preprints and manuscripts using markdown and github actions

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Purpose: This template provides a series of scripts to render a markdown document into an interactive website and a series of PDFs.

Motivation: It makes collaborating on text with GitHub easier, and means that we never need to think about the output.

Internals: GitHub actions and a series of python scritpts. The markdown is handled with `pandoc`.

Forecasting in ecology. Forecasting in weather, introduce computers.

Future is uncertain, how do we best act given a forecast?

We have some goal state for the future, and some estimate of what the state of the world will be given a set of actions.

Brief summary of decision theory.

Transition to theme of optimization given unknown information. In face of uncertainty, decision making is an optimization problem. Frame optimization problem mathematically an introduce concept of solution-space and constraint.

Transition to how this is applied in ecology. Introduce idea of monitoring network. Transition to specifics of this thesis.

[Figure 1 about here.]

CH1 optimizing sampling of species distributions

- simulate species distribution and efficacy of detection given a set of observation points where the dist from observation site decays.
- optimize set of repeated sampling locations L for a *known* distribution D.
- address SDM not being the territory

CH2 optimizing sampling of interactions

- the missing link paper, turn this into optimizing with two different SDMs

CH3 optimizing corridor placement

- land cover -> resistance -> extinction time
- simulated annealing to optimize landscape optimization

CH4 a software note on the resulting packages.

- `Observatories.jl`, `Corridors.jl`, `MCD.jl`

Figure 1: thesis concept