How to do good research & evaluation

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How to do good research

• Planning for incremental research

• Research defined by minimization of effort to get a paper out

• How incremental can it be to still get accepted

• Instead: think about long-term goals / hard problems

• Problem with the research evaluation
How to do good research

• Over-complicated models (or over-complicated description)

• Making models complex without any evaluation of necessity

• Missing justification for the approach

• Models designed for one particular dataset, hiding the fact that it doesn’t work elsewhere, random trying of datasets until it works

• Evaluation of the contribution of the individual components
Proper baselines

• Missing or flawed baselines

• Baselines implemented without care and with suboptimal results

• Use of weak baselines to show a bigger gap
How to do good evaluation

• Proper evaluation
  - tuning of the parameters on the test set, for example by looking at the results on the test set
  - tuning parameters per dataset by looking at the results on the test set
  - avoiding a precise description of how parameters were set
  - change of the training/test set-up with respect to the state of the art
Open sourcing of the code & data

• Open sourcing of the code and data
• Ideally for each paper [argument: too much work]
• Full description of the parameters, set-up, data
• Make results reproducible
Journal papers

- Extended description of the method
- In-depth evaluation
- Constructive feedback from the reviewers