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How I Fail in Writing Papers

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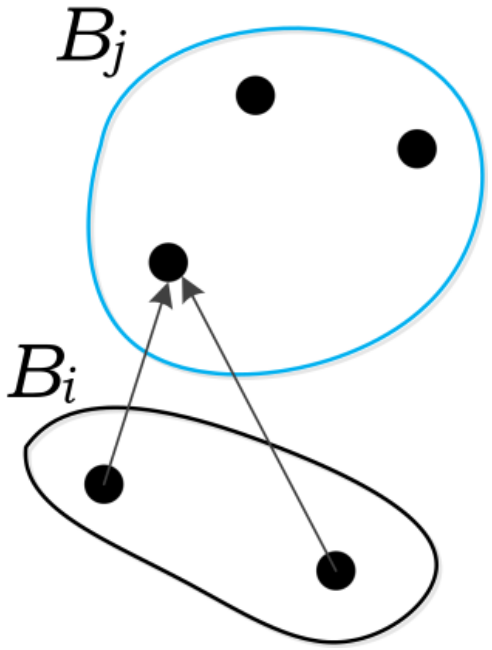
How I Fail in Writing Papers

How I Fail series

This talk

- 9 things I should have done differently
- In several papers
- PhD (topic: multiple instance learning) & after



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2011

Fail #1 - Submitting too early

Me:

- “We show two […] methods and analyse their advantages and disadvantages”

Reviewers:

- “very preliminary”
- “subject treated in a shallow manner”
- “no clear analysis on when the two methods are effective”
- “novelty and/or contribution not clear”

However

- Practice writing
- Meet & discuss with other researchers
- Motivation
- →

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Fail #2 - Bad title

21st International Conference on Pattern Recognition (ICPR 2012)
November 11-15, 2012. Tsukuba, Japan

Does one rotten apple spoil the whole barrel?

Veronika Cheplygina, David M.J. Tax, Marco Loog

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Available online at www.sciencedirect.com

ScienceDirect

Current Opinion in
Biomedical Engineering

Cats or CAT scans: Transfer learning from natural or medical image source data sets?

Veronika Cheplygina

Paper URL

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Fail #3 - Not looking at the raw data

Benchmark data with already extracted features

– Fox, Tiger, Elephant [1], image classification.
– 20 Corel datasets [3], image classification.

Fail #4 – Ad-hoc comparisons

Different budgets for method parameters

- miSVM with a polynomial kernel, where $p \in \{1, 2\}$ is the degree of the polynomial and $C \in \{0.01, 0.1, 1, 10\}$ is a regularization parameter. We consider both noisy-or and average fusion rules.
- MILBoost with 100 reweighting rounds

Fail #5 – Ad-hoc analysis of comparisons

More classifiers than datasets

Tested individual methods against best method

Conclusions about groups (not individual) methods

Classifier	AUC $\mathcal{X}_{val}$	AUC $\mathcal{X}_{te}$
Simple logistic noisy	60.9	60.7
Simple logistic avg	**73.5**	**75.8**
Simple k-NN noisy	64.3	68.2
Simple k-NN avg	66.8	69.7
MILBoost	54.6	54.3
Citation k-NN	65.9	56.9
mean-inst SVM	**77.2**	**77.6**
extremes SVM	**73.1**	65.2
BoW SVM	50.0	50.0
MILES	50.0	50.0
meanmin SVM	**74.0**	**75.4**
meanmin k-NN	59.0	53.5
emd SVM	**74.2**	72.9
emd k-NN	63.9	54.4

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2015

Fail #6 - Not (enough) open data & code

- Only sharing models, not experiments
- Data in MATLAB format
- No version control
- Etc

The CRAPL: An academic-strength open source license

[article index] [email me] [@mattmight] [rss]

Academics rarely release code, but I hope a license can encourage them.

Generally, academic software is stapled together on a tight deadline; an expert user has to coerce it into running; and it's not pretty code. Academic code is about "proof of concept." These rough edges make academics reluctant to release their software. But, that doesn't mean they shouldn't.

Most open source licenses (1) require source and modifications to be shared with binaries, and (2) absolve authors of legal liability.

An open source license for academics has additional needs: (1) it should require that source and modifications used to validate scientific claims be released with those claims; and (2) *more importantly*, it should absolve authors of shame, embarrassment and ridicule for ugly code.

Openness should also hinge on publication: once a paper is accepted, the license should force the release of modifications. During peer review, the license should enable the confidential disclosure of modifications to peer reviewers. If the paper is rejected, the modifications should remain closed to protect the authors' right to priority.

Toward these ends, I've drafted the **CRAPL--the Community Research and Academic Programming License**. The CRAPL is an open source "license" for academics that encourages code-sharing, regardless of how much how much Red Bull and coffee went into its production. (The text of the CRAPL is in the article body.)

https://matt.might.net/articles/crapl/

Fail #7 – Not <u>really</u> understanding statistical tests

- What test to use (e.g. debates about Friedman's test)
- Minimum number & size of datasets
- How to group comparisons

Fail #8 – Not following up on ideas

Exploring the similarity of medical imaging classification problems
V Cheplygina, P Moeskops, M Veta, B Dashtbozorg, JPW Pluim
Intravascular Imaging and Computer Assisted Stenting, and Large-Scale ...

Characterizing multiple instance datasets
V Cheplygina, DMJ Tax
International Workshop on Similarity-Based Pattern Recognition, 15-27

Fail #9 - Not enough rejections

- Seek feedback more actively

- Share via Twitter
- Try other venues
- Advertise conference paper/poster

- Need more diverse (re)views to improve

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