UNIVERSITY OF CALIFORNIA, MERCED

How to Get Your CVPR Paper Rejected?

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Outline

- Conferences
- Journals
- Writing
- Presentation
- Lessons

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Conferences

- CVPR – Computer Vision and Pattern Recognition, since 1983
  - Annual, held in US
- ICCV – International Conference on Computer Vision, since 1987
  - Every other year, alternate in 3 continents
- ECCV – European Conference on Computer Vision, since 1990
  - Every other year, held in Europe

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Conferences

- ACCV – Asian Conference on Computer Vision
- BMVC – British Machine Vision Conference
- ICPR – International Conference on Pattern Recognition
- SIGGRAPH
- NIPS – Neural Information Processing Systems

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Conferences

- MICCAI – Medical Image Computing and Computer-Assisted Intervention
- FG – IEEE Conference on Automatic Face and Gesture Recognition
- ICCP – IEEE International Conference on Computational Photography
- ICML – International Conference on Machine Learning
- IJCAI, AAAI, MVA, ICDR, ICVS, DAGM, CAIP, ICRA, ICASSP, ICIP, SPIE, DCC, WACV, 3DPVT, ACM Multimedia, ICME, …

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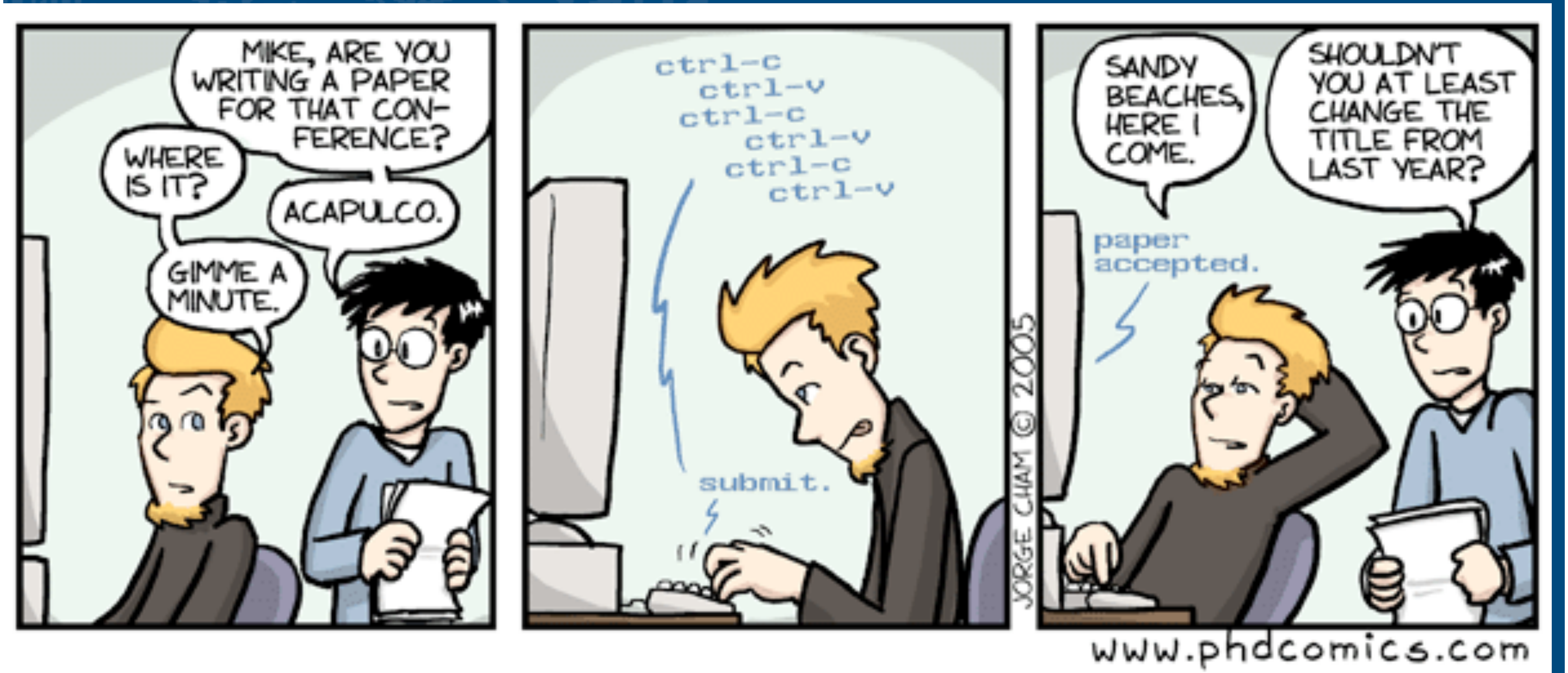
Conference Location

Conference Location



- Me and confernece I want to attend (location vs. reputation)

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Conference Organization

- General chairs: administration
- Program chairs: handling papers
- Area chairs:
  - Assign reviewers
  - Read reviews and rebuttals
  - Consolidation reports
  - Recommendation
- Reviewers
- Authors

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Review Process

- Submission
- CVPR/ECCV/ICCV
  - Double blind review
  - Program chairs: assign papers to area chairs
  - Area chairs: assign papers to reviewers
- Rebuttal
- Results

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Area Chair Meetings

- Each paper is reviewed by 2/3 area chairs
- Area chair make recommendations
- Program chairs make final decisions
- Virtual meetings
- Onsite meetings
  - Several panels
  - Buddy/triplet

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Triage

- Area chairs know the reviewers
- Reviews are weighted
- Based on reviews and rebuttal
  - Accept: (decide oral later)
  - Reject: don’t waste time
  - Go either way: lots of papers
- Usually agree with reviewers but anything can happen as long as there are good justifications

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Conference Acceptance Rate

- ICCV/CVPR/ECCV: ~ 25%
- ACCV (2009): ~ 30%
- NIPS: ~ 25%
- BMVC: ~ 30%
- ICIP: ~ 45%
- ICPR: ~ 55%

- Disclaimer
  - low acceptance rate = high quality?

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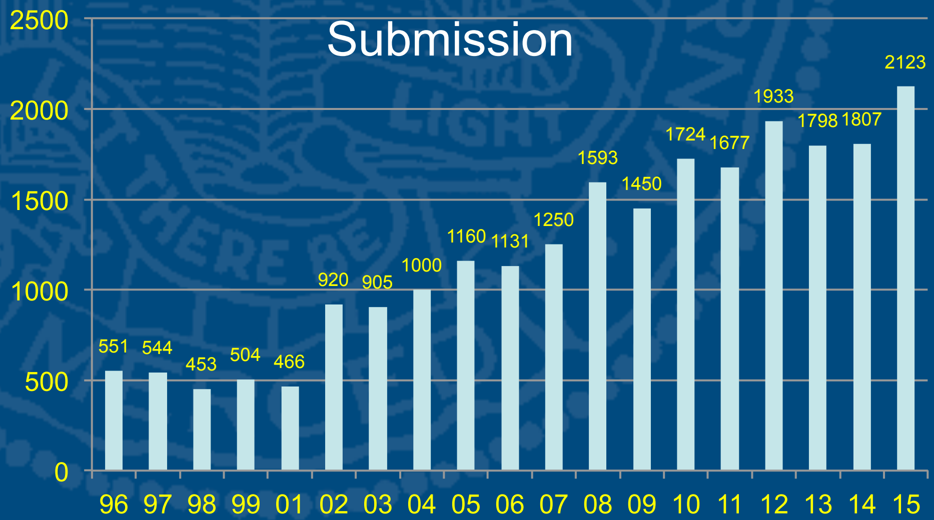
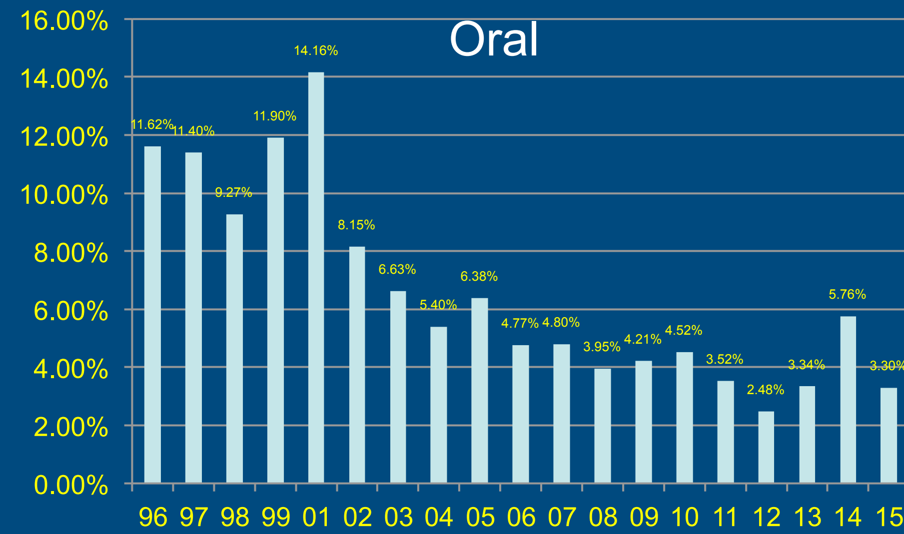
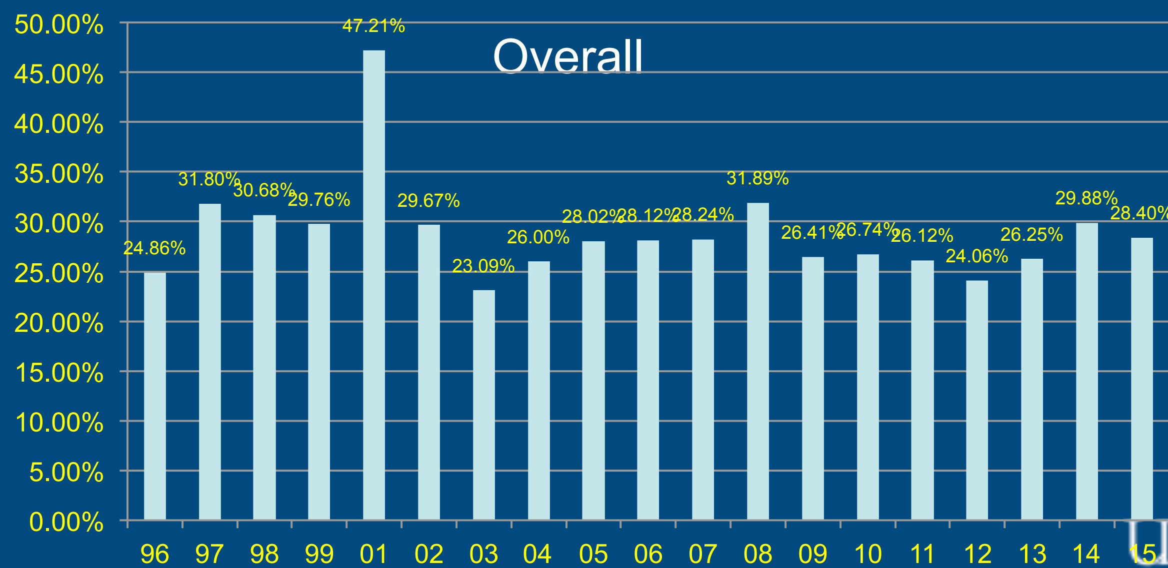
CVPR







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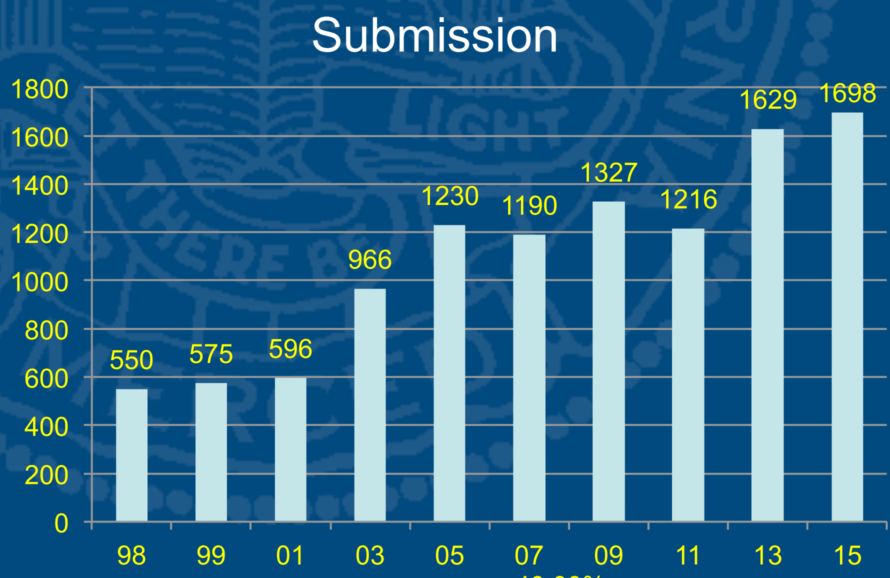
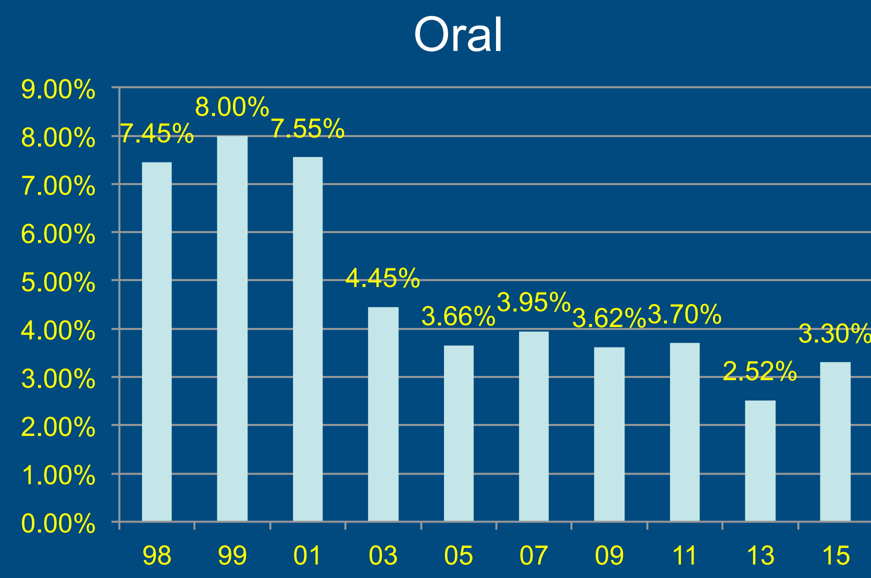
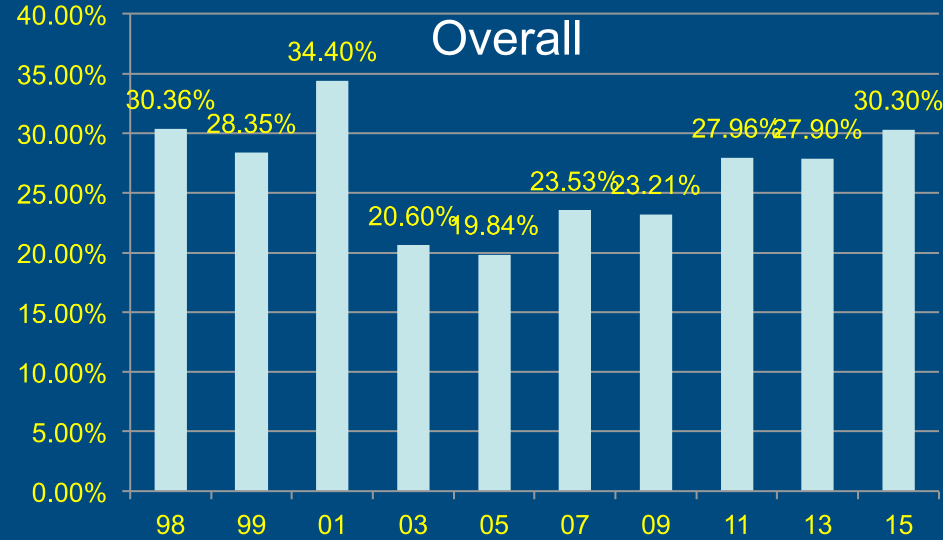
ICCV







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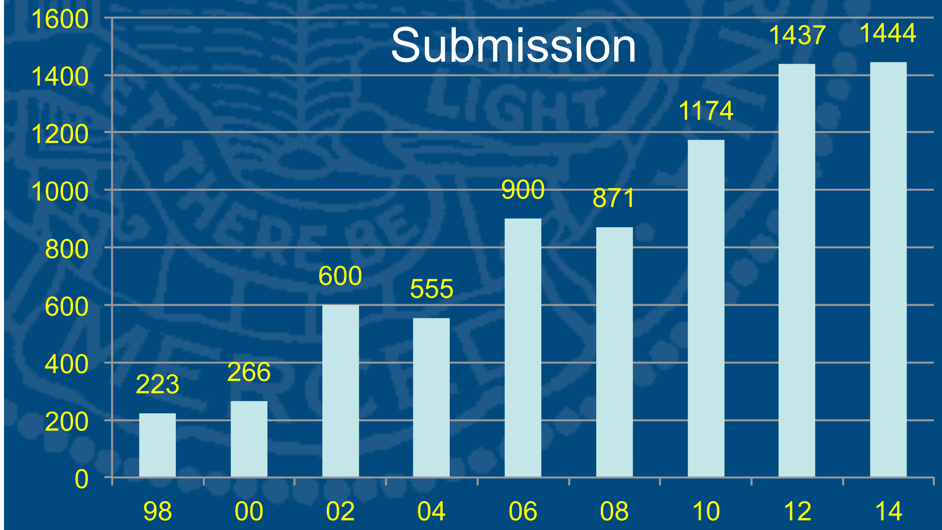
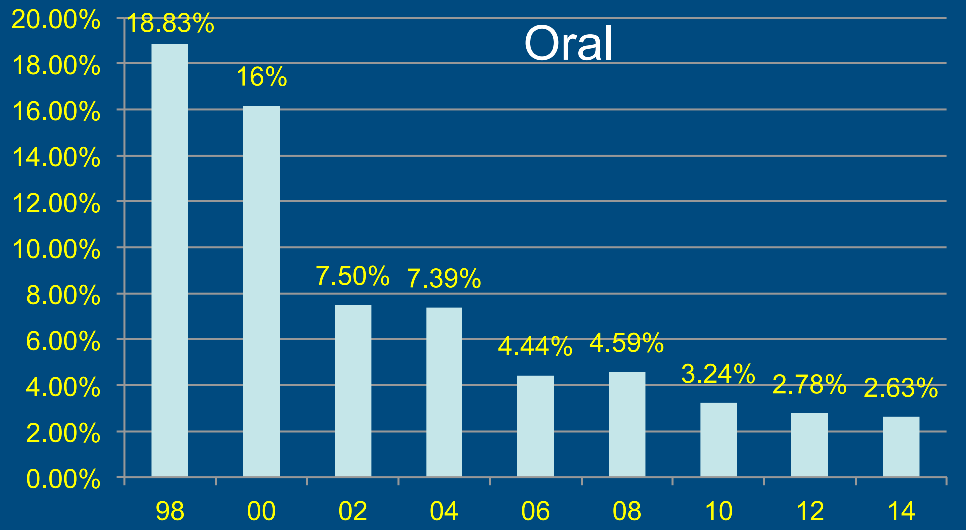
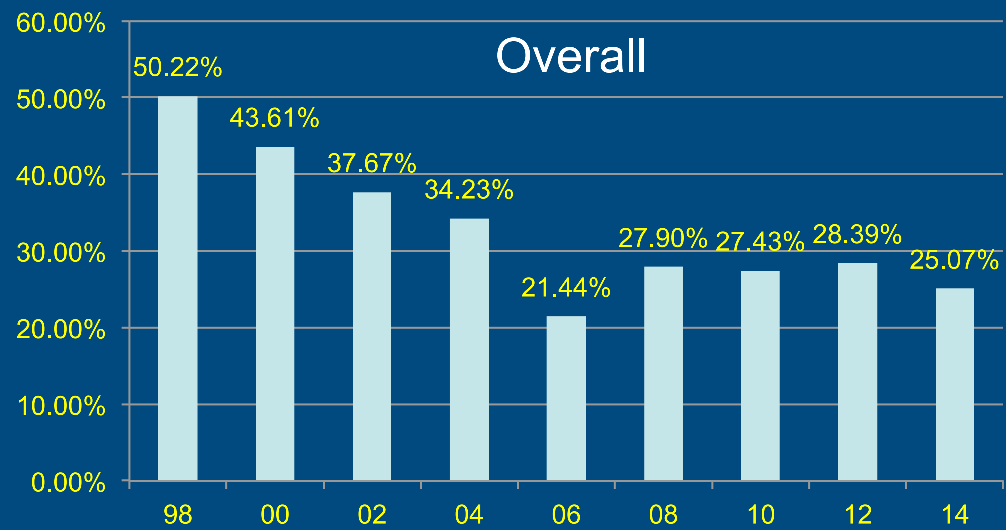
ECCV







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Top 100 Publications - English

- For what it is worth (h5 index by Google Scholar)

1. Nature
2. The New England Journal of Medicine
3. Science

…

55. IEEE Conference on Computer Vision and Pattern Recognition (CVPR)

…

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Top Publications - E&CS

1. Nano Letters

…

8. IEEE Conference on Computer Vision and Pattern Recognition (CVPR)

...

16. IEEE Transactions on Pattern Analysis and Machine Intelligence

…

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Reactions

- Top journal papers
- Workshops vs conferences
- Waiting for the review or final results
- Acceptance
- Reject
- Mixed feeling
- Finding an error
- Resubmit?
- This time, it will go through
- Paper finally accepted
- Registration
- Oral presentation
- Poster presentation

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Database Community

- Jeffrey Naughton's ICDE 2010 keynote
- What's wrong with the reviewing process?
- How to fix that?

Journals

- PAMI – IEEE Transactions on Pattern Analysis and Machine Intelligence, since 1979 (impact factor: 5.96, #1 in all engineering and AI, top-ranked IEEE and CS journal)
- IJCV – International Journal on Computer Vision, since 1988 (impact factor: 5.36, #2 in all engineering and AI)
- CVIU – Computer Vision and Image Understanding, since 1972 (impact factor: 2.20)

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Journals

- IVC – Image and Vision Computing
- TIP – IEEE Transactions on Image Processing
- TMI- IEEE Transactions on Medical Imaging
- MVA – Machine Vision and Applications
- PR – Pattern Recognition
- TMM – IEEE Transactions on Multimedia
- …

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PAMI Reviewing Process

- Associate editor-in-chief (AEIC) assigns papers to associate editors (AE)
- AE assigns reviewers
- First-round review: 2-4 months
  - Accept as is
  - Accept with minor revision
  - Major revision
  - Resubmit as new
  - Reject

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PAMI Reviewing Process

- Second-round review: 2-4 months
  - Accept as is
  - Accept with minor revision
  - Major revision (rare cases)
  - Reject
- EIC makes final decision
- Overall turn-around time: 6 to 12 months
- Rule of thumb: 30% additional work beyond a CVPR/ICCV/ECCV paper

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IJCV/CVIU Reviewing Process

- Similar formats
- Slightly longer turn-around time

Journal Acceptance Rate

- PAMI
  - 2013: 151/959: 15.7%
  - 2014: 160/1018: 15.7%
- IJCV: ~ 20% (my guess, no stats)
- CVIU: ~ 25% (my guess, no stats)

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From Conferences to Journals

- How much additional work?
  - 30% additional more work for PAMI?
  - As long as the journal version is significantly different from the conference one
- Novelty of each work
  - Some reviewers still argue against this
  - Editors usually accept paper with the same ideas

How to Get Your CVPR Paper Rejected?

- Jim Kajia (SIGGRAPH 93 papers chair):
  How to get your SIGGRAPH paper rejected?
- Bill Freeman:
  How to write a good CVPR submission
- Do not
  - Pay attention to review process
  - Put yourself as a reviewer to exam your work from that perspective
  - Put the work in right context
  - Carry out sufficient amount of experiments
  - Compare with state-of-the-art algorithms
  - Pay attention to writing

Review Form

- Summary
- Overall Rating
  - Definite accept, weakly accept, borderline, weakly reject, definite reject
- Novelty
  - Very original, original, minor originality, has been done before
- Importance/relevance
  - Of broad interest, interesting to a subarea, interesting only to a small number of attendees, out of CVPR scope

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Review Form

- Clarity of presentation
  - Reads very well, is clear enough, difficult to read, unreadable
- Technical correctness
  - Definite correct, probably correct but did not check completely, contains rectifiable errors, has major problems
- Experimental validation
  - Excellent validation or N/A (a theoretical paper), limited but convincing, lacking in some aspects, insufficient validation
- Additional comments
- Reviewer's name

Learn from Reviewing Process

- Learn how others/you can pick apart a paper
- Learn from other's mistakes
- Get to see other reviewers evaluate the same paper
- See how authors rebut comments
- Learn how to write good papers
- Learn what it takes to get a paper published

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Put Yourself as Reviewer

- Reviewer's perspective
- How a paper gets rejected?
- What are the contributions?
- Does it advance the science in the filed?
- Why you should accept this paper?
- Is this paper a case study?
- Is this paper interesting?
- Who is the audience?

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Novelty

- What is new in this work?
  - Higher accuracy, significant speed-up, scale-up, ease to implement, generalization, wide application domain, connection among seemingly unrelated topics, ...
- What are the contributions (over prior art)?
- Make a compelling case with strong supporting evidence

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Experimental Validation

- Common data set
- Baseline experiment
- Killer data set
- Large scale experiment
- Evaluation metric
- Realize things after submission
- Friendly fire

Compare With State of the Art

- Do your homework
- Need to know what is out there (and vice versa)
- Need to show why one's method outperforms others, and in what way?
  - speed?
  - accuracy?
  - sensitive to parameters?
  - assumption
  - easy to implement?
  - general application?

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Writing

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Writing

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Writing

- Reviewing a poorly written paper
- Clear presentation
- Terse
- Careful about wording
- Make claims with strong evidence

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Writing

- Matt Welsh's blog on scientific writing
- Sharpen your mental focus
- Force you to obsess over every meticulous detail – word choice, word count, overall tone, readability of graphs (and others such as font size, layout and spacing, and page limit)

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Writing

- Crystalizing the ideas through the process of putting things together
- Hone the paper to a razor-sharp, articulate, polished work

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Writing

- Write the paper *as early as possible*, sometimes *before* even starting the research work
- Will discover the important things that you have not thought about
- The process of writing results in a flood of ideas

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Writing

- Even if a paper is not accepted, the process is energizing and often lead to new ideas for the next research problems
- Submitting the paper is often the start of a new line of work
- Riding on that clarity of thought would emerge post-deadline (and [a much-needed break](#))

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Tell A Good Story

- Good ideas and convincing results
- But not too much (vs grant proposal)

Presentation

- Good artists copy, great artists steal
- Not just sugar coating
- Not just a good spin
- Tell a convincing story with solid evidence
- Present your ideas with style
- Q&A
- Real stories

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Interesting Title

- Cool titles attract people
- Grab people’s attention
- Buzz word?
- But don’t be provocative

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Math Equations

- Minimal number of equations
  - No more, no less
  - Too many details simply make a paper inaccessible
- Too few equations
- Many good papers have no or few equations
  - CVPR 13 best paper
  - CVPR 05 HOG paper

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Figures

- [Be clear]
- Sufficient number of figures

Theoretical or Applied?

- Computer vision is more applied, at least nowadays
- Theory vs real world
- More high impact papers are about how to get things done right

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Common Mistakes

- Typos
- Unsupported claims
- Unnecessary adjectives (superior!)
- “a”, “the”
- Inanimate objects with verbs
- Inconsistent usage of words
- Laundry list of related work (or worse copy sentences from abstracts)
- Bad references
- Laundry list of related work
- Repeated boring statements

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Get Results First than Writing?

- Conventional mode
  - Idea-> Do research -> Write paper
- "How to write a great research paper" by Simon Peyton Jones
  - Idea -> Write paper -> Do research
    - Forces us to be clear, focused
    - Crystallizes what we don't understand
    - Opens the way to dialogue with others: reality check, critique, and collaboration
- My take
  - Idea -> Write paper -> Do research -> Revise paper -> Do research -> Revise paper -> …

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Supplementary Material

- Important
- Add more results and large figures
- Add technical details as necessary (
  don't miss important details)
- Derivation details, e.g., proof of a theorem

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Most Important Factors

- Novelty
- Significant contributions (vs. salami publishing)
- Make sure your paper is non-rejectable (above the bar with some error margin)

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Reviews

- Me: Here is a faster horse
- R1: You should have used my donkey
- R2: This is not a horse, it’s a mule
- R3: I want a unicorn!

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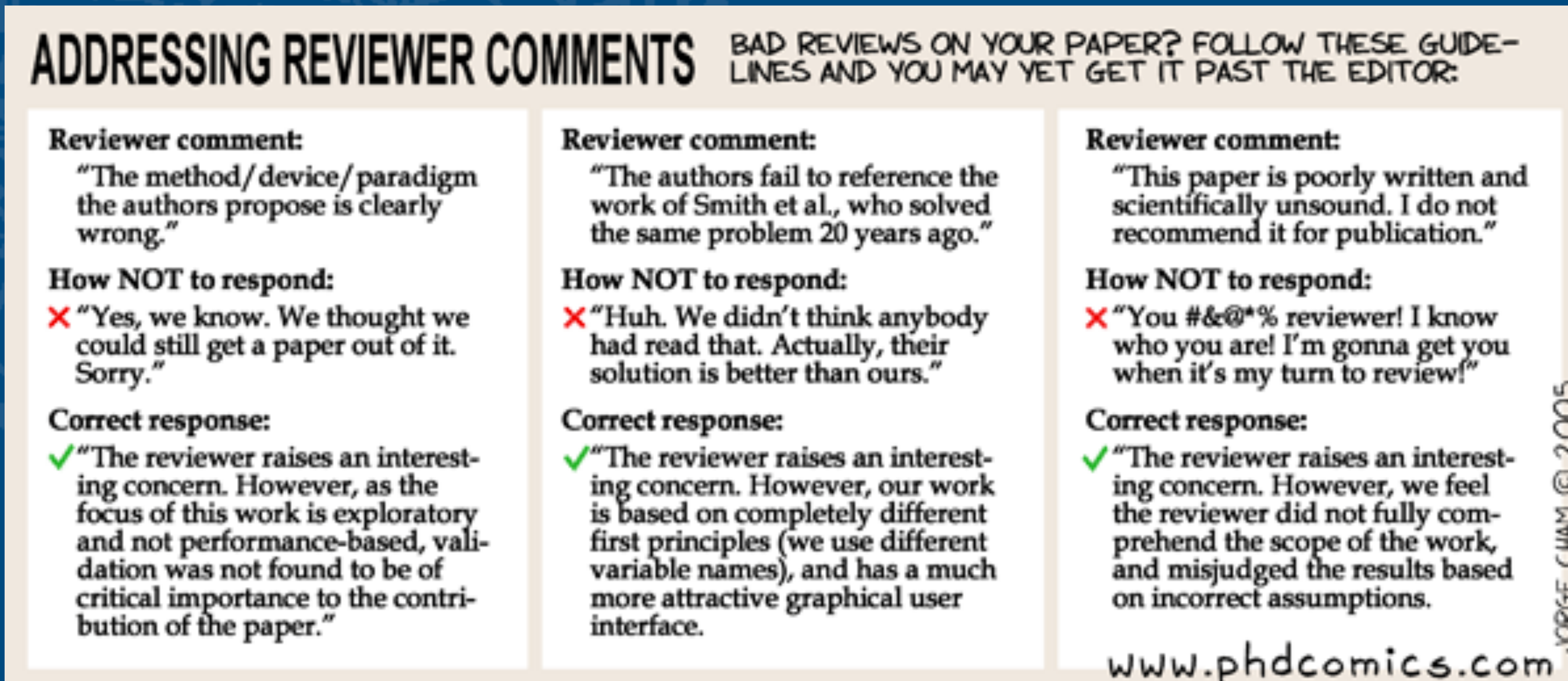
Rebuttal or Response



Good surprise	Bad surprise
• One CVPR paper: BR, BR, DR • Two ECCV paper: PR, PR, BR • One CVPR 15 paper: BR, BR, WR -> poster, poster, poster • One CVPR 15 paper: DR, WA, BR -> Poster, Poster, WR	Two ECCV papers: PA, PA, BR One CVPR 15 paper: WA, BR, BR -> Poster, Poster, WR One CVPR 16 paper: WR, WR, BR

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Never Know What will Happen

Masked Meta-Reviewer ID: Meta_Reviewer_1
Meta-Reviews:
Question
Consolidation Report
All reviewers agree that this paper has moderate novelty of using partial and spatial information for sparse representation. However, they also concern about
- unclear presentation on technical details (eg. definitions, inference algorithm, pooling methods, template updating schemes, experimental settings etc.),
- not extensive experimental comparison (needs tests on more challenging videos),
- missing justification of the assumption (complementary nature of two kinds of pooling features) and the efficacy of each term.

The authors rebuttal addresses most issues, but is not sufficient to ease the main concerns of R1 and R2. So, the AC recommends the paper to be rejected as it is.

Decision
Definitely Accept

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Challenging Issues

- Large scale
  - CVPR 2011 best paper: pose estimation
  - CVPR 2013 best paper: object detection
- Unconstrained
- Real-time
  - CVPR 2001: face detector
  - CVPR 2006: scalable object recognition
- Robustness
- Recover from failure

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Interesting Stats

- Best papers and top cited papers in computer science
- Best papers = high impact?
- Oral papers are more influential?
- CVPR Longuet-Hggins prize
- ICCV Helmholtz award

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Data Set Selection

- NIPS 02 by Doudou LaLoudouana and Mambobo Bonouliqui Tarare, Lupano Tecallonou Center, Selacie, Guana
- The secret to publish a paper in machine learning conferences?
- Read the references therein carefully!

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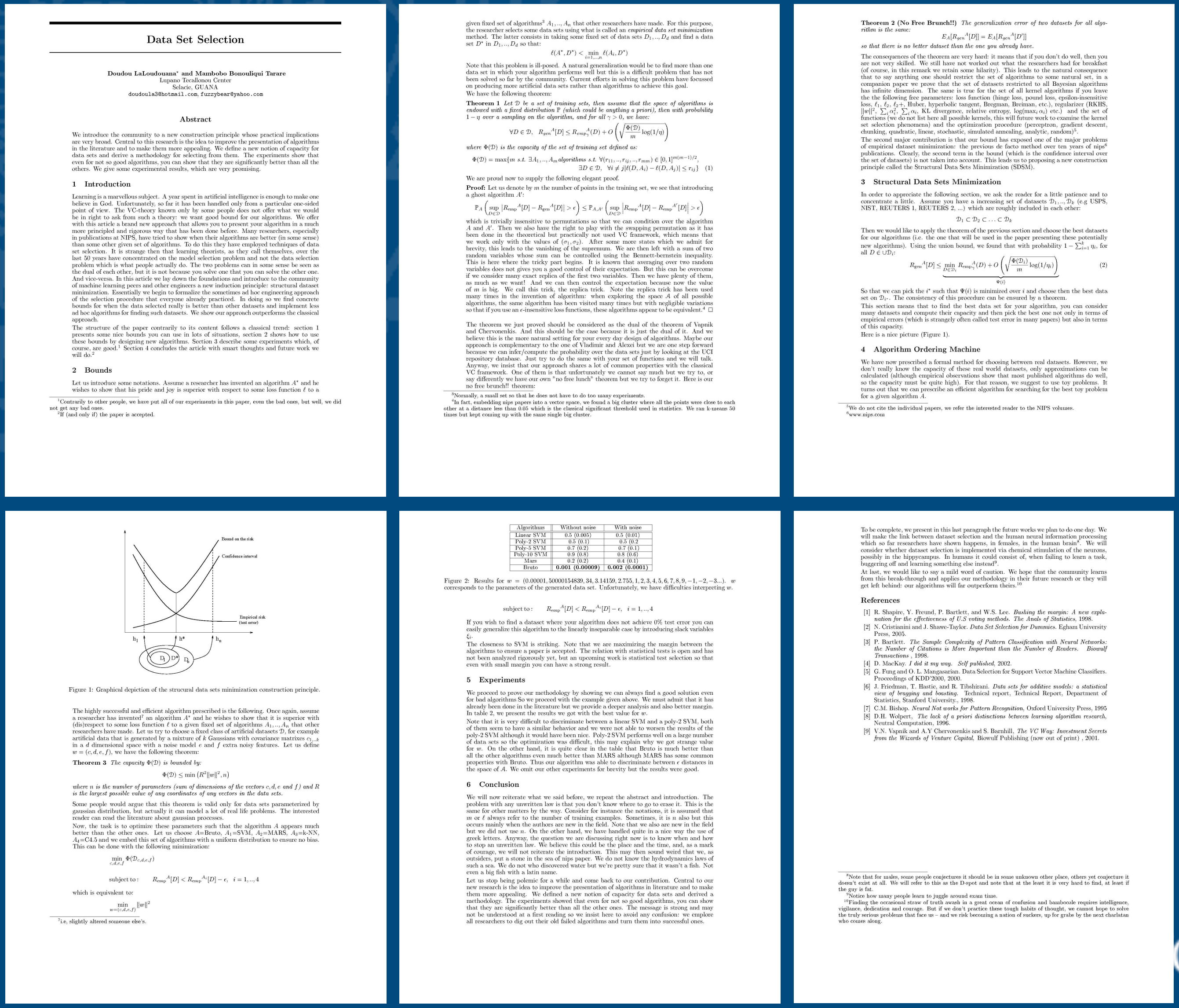
Data Set Selection



Data Set Selection

Data Set Selection

Doudou LaLoudouana[*] and Mambobo Bonouliqui Tarare
Lupano Tecallonou Center
Selacie, GUANA
doudoula3@hotmail.com, fuzzybear@yahoo.com

Abstract

We introduce the community to a new construction principle whose practical implications are very broad. Central to this research is the idea to improve the presentation of algorithms in the literature and to make them more appealing. We define a new notion of capacity for data sets and derive a methodology for selecting from them. The experiments show that even for not so good algorithms, you can show that they are significantly better than all the others. We give some experimental results, which are very promising.

Data Set Selection

References

[1] R. Shapire, Y. Freund, P. Bartlett, and W.S. Lee. *Bushing the margin: A new explanation for the effectiveness of U.S voting methods. The Anals of Statistics*, 1998.

[2] N. Cristianini and J. Shawe-Taylor. *Data Set Selection for Dummies.* Egham University Press, 2005.

[3] P. Bartlett. *The Sample Complexity of Pattern Classification with Neural Networks: the Number of Citations is More Important than the Number of Readers. Biowulf Transactions* , 1998.

[4] D. MacKay. *I did it my way. Self published*, 2002.

[5] G. Fung and O. L. Mangasarian. Data Selection for Support Vector Machine Classifiers. Proceedings of KDD'2000, 2000.

[6] J. Friedman, T. Hastie, and R. Tibshirani. *Data sets for additive models: a statistical view of bragging and boasting.* Technical report, Technical Report, Department of Statistics, Stanford University., 1998.

[7] C.M. Bishop. *Neural Not works for Pattern Recognition*, Oxford University Press, 1995

[8] D.H. Wolpert, *The lack of a priori distinctions between learning algorithm research*, Neutral Computation, 1996.

[9] V.N. Vapnik and A.Y Chervonenkis and S. Barnhill, *The VC Way: Investment Secrets from the Wizards of Venture Capital*, Biowulf Publishing (now out of print) , 2001.

(originally) [6] ... a egotistical view of bragging and boasting.....

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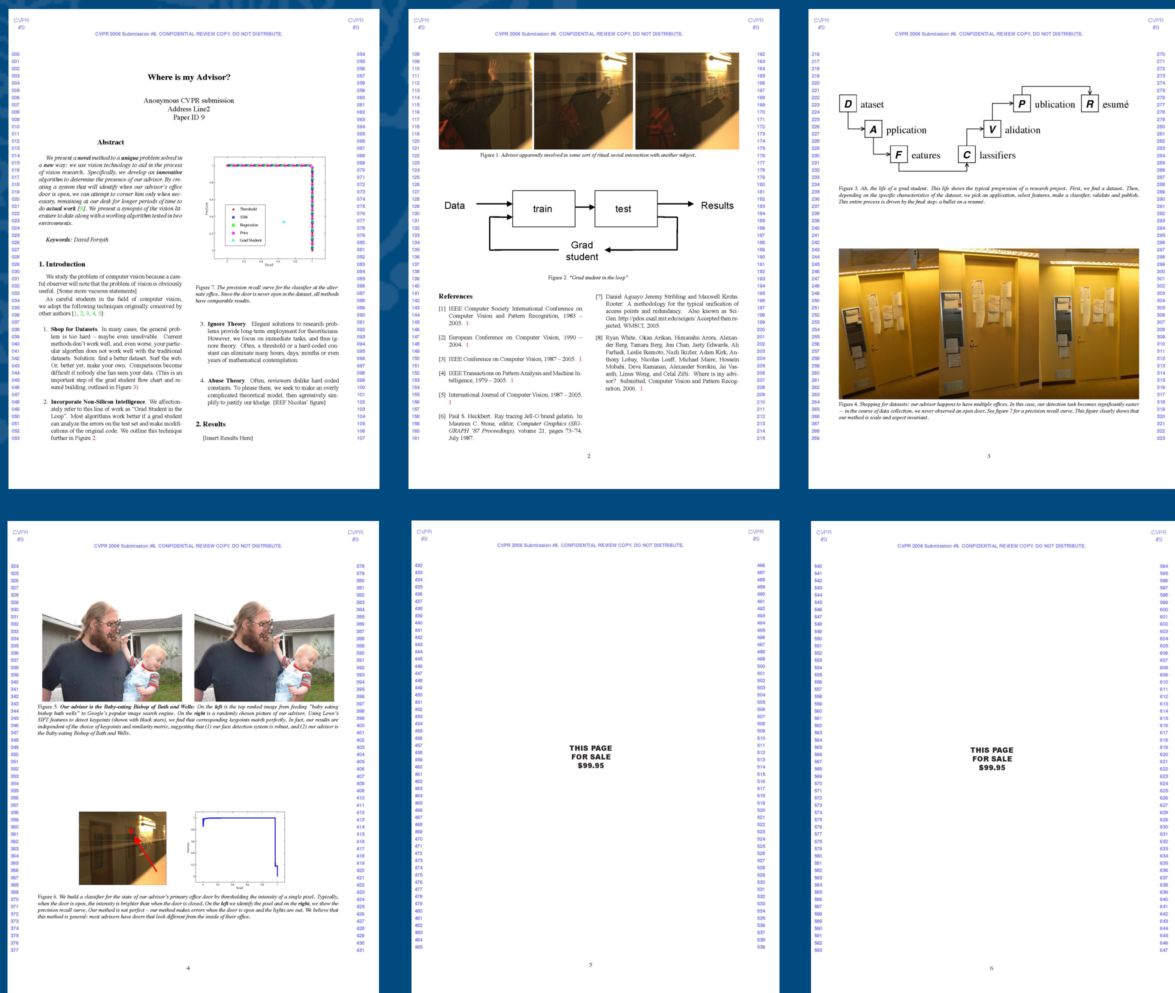
Where Is My Advisor?



Ask Someone to Proofread

- Certainly your advisor
- Polish your work
- My story

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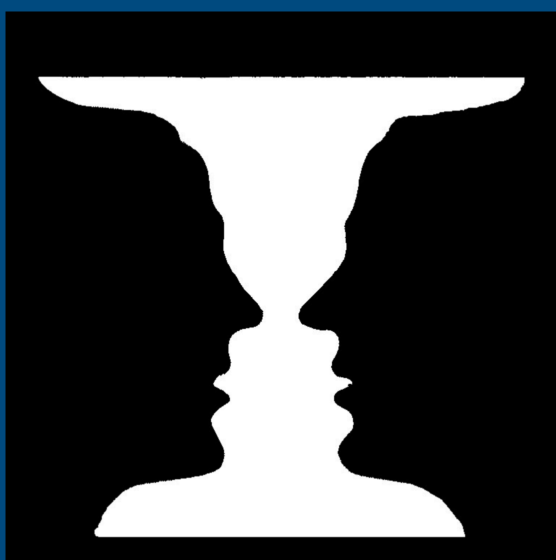
Paper Gestalt



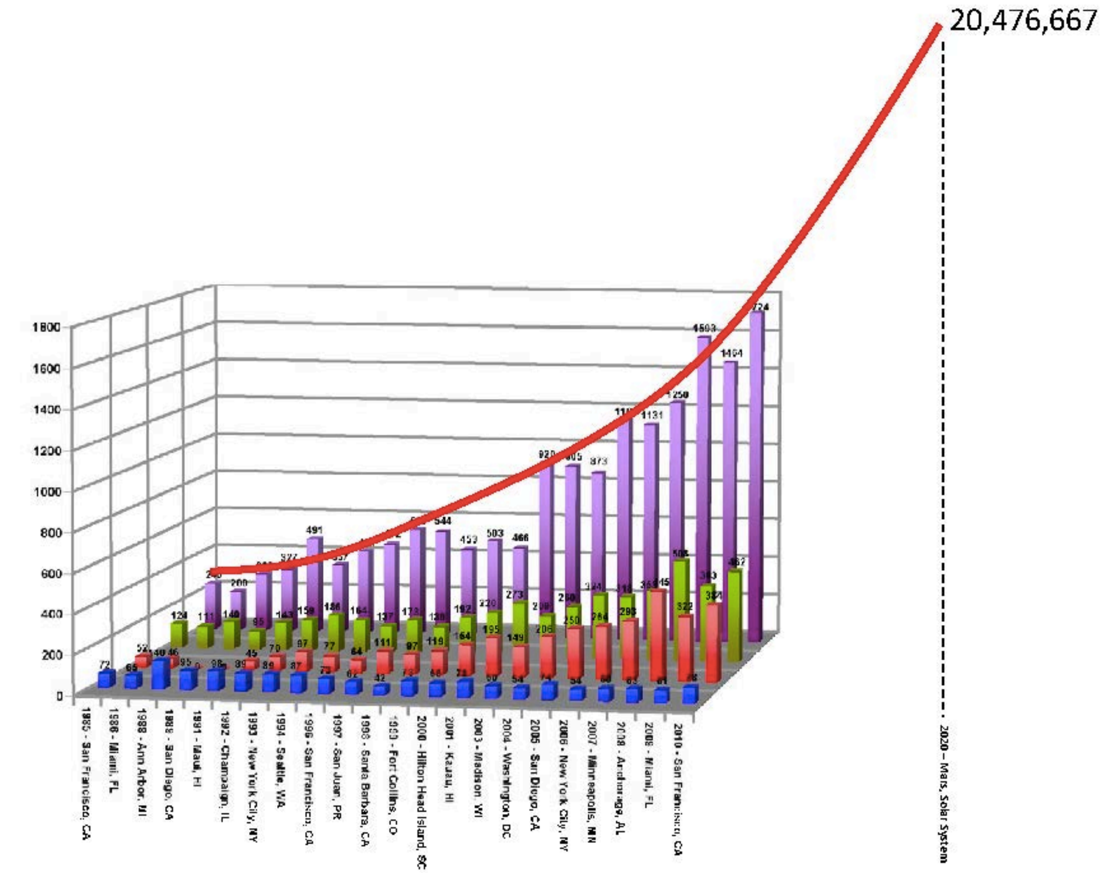


Figure 1. **Paper submission trends.** The number of submitted papers to CVPR, and other top tier computer vision conferences, is growing at an alarming rate. In this paper we propose an automated method of rejected sub-par papers, thereby reducing the burden on reviewers.

Paper Gestalt

- CVPR 10 by Carven von Bearnensquash, Department of Computer Science, University of Phoenix
- Main Point: Get your paper looking pretty with right mix of equations, tables and figures

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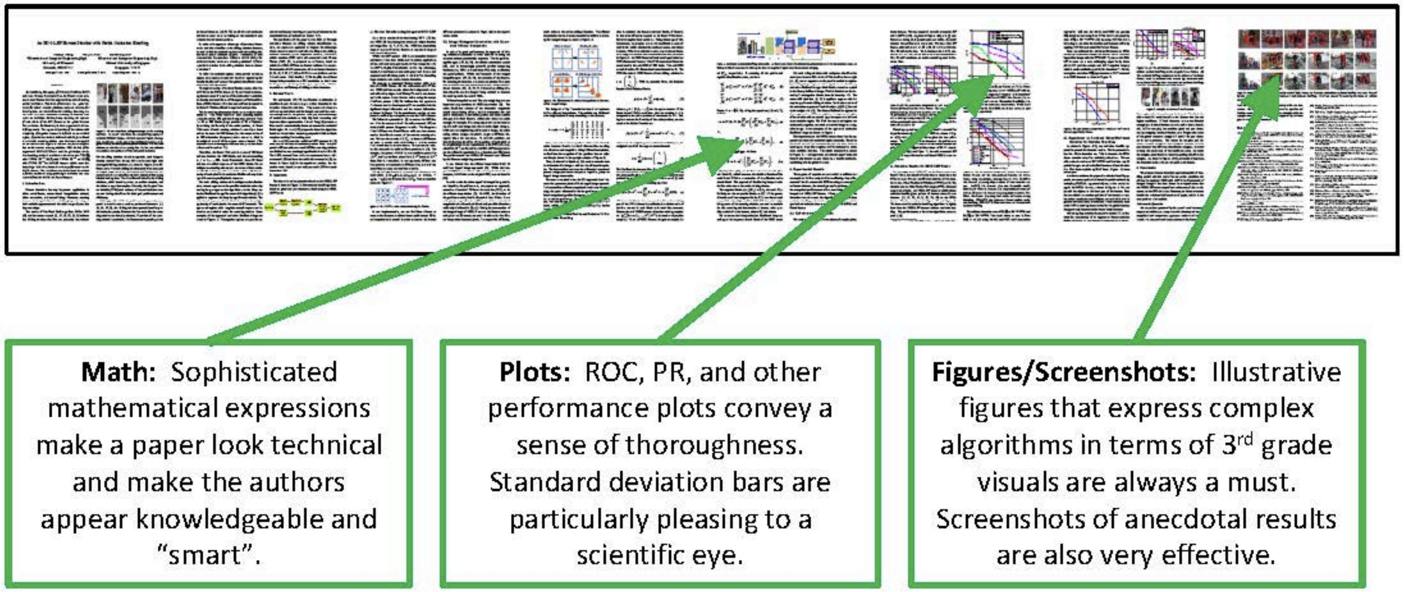

Figure 6. **Characteristics of a "Good" paper.**

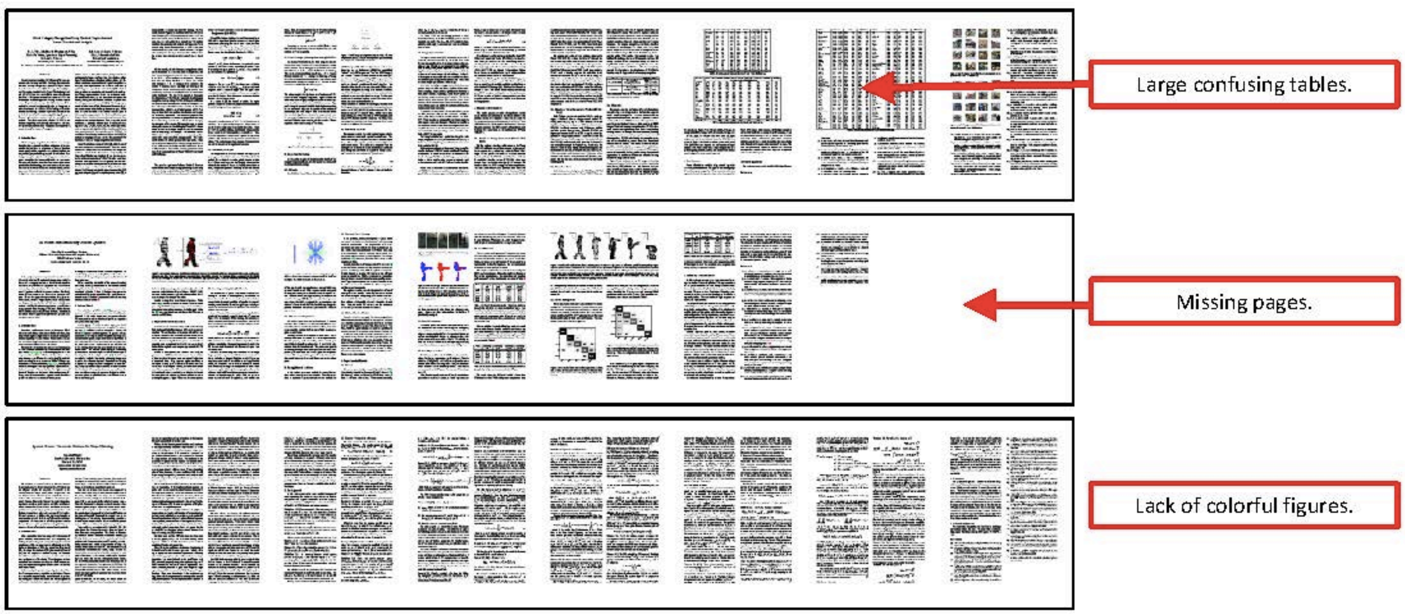

Figure 7. **Characteristics of a "Bad" paper.**

Tools

- Google scholar h-index
- Software: publish or perish
- DBLP
- Mathematics genealogy

- Disclaimer:
  - h index = significance?
  - # of citation = significance?

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Basic Rules

- Use LaTeX
- Read authors' guideline
- Read reviewers' guideline
- Print out your paper – what you see may NOT be what you get
- Submit paper right before deadline
  - Risky
  - Exhausting
  - Murphy's law
- Do not count on extension

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Lessons

- Several influential papers have been rejected once or twice
- Some best papers make little impact
- Never give up in the process

Karma?

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Your Advisor and You

- Suggesting a research topic
- When your advisor presents your work
- When you explain your work
- Demos
- Good results

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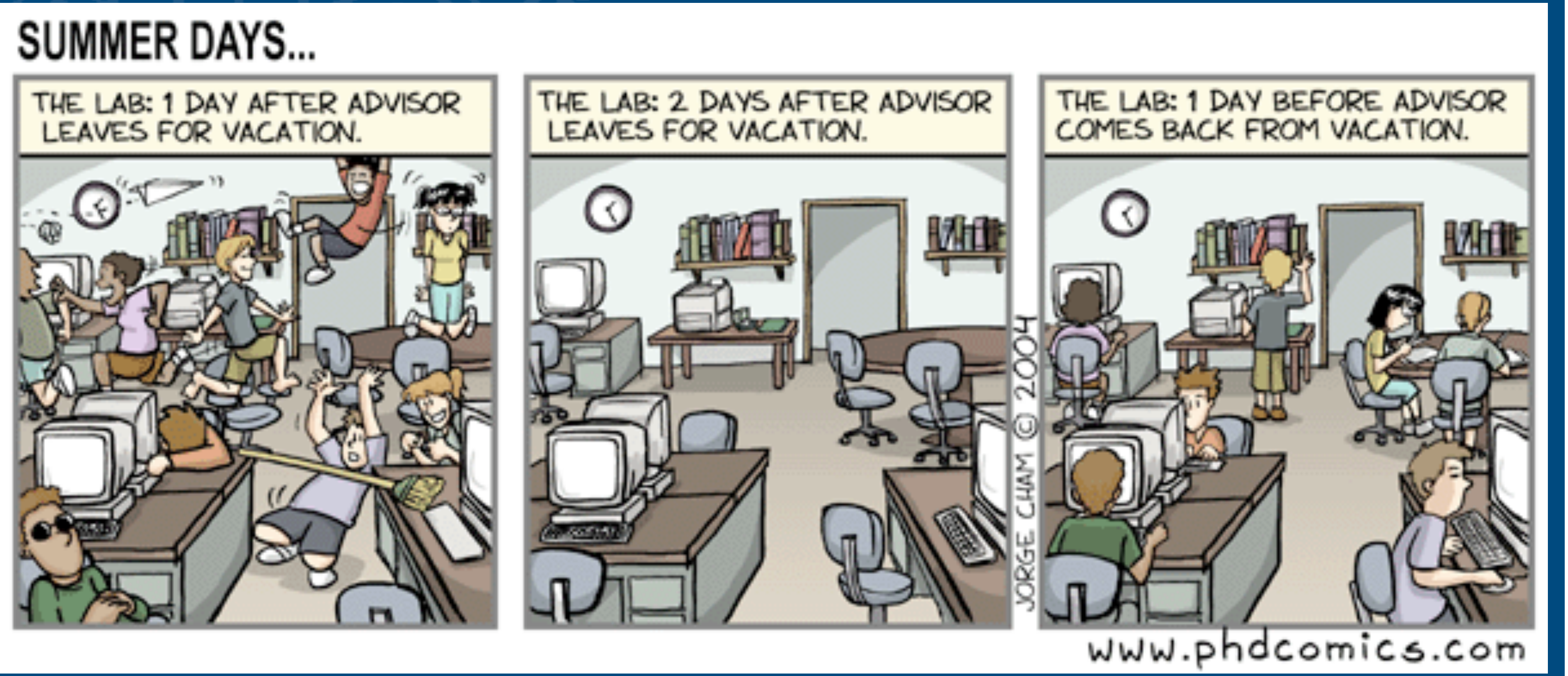
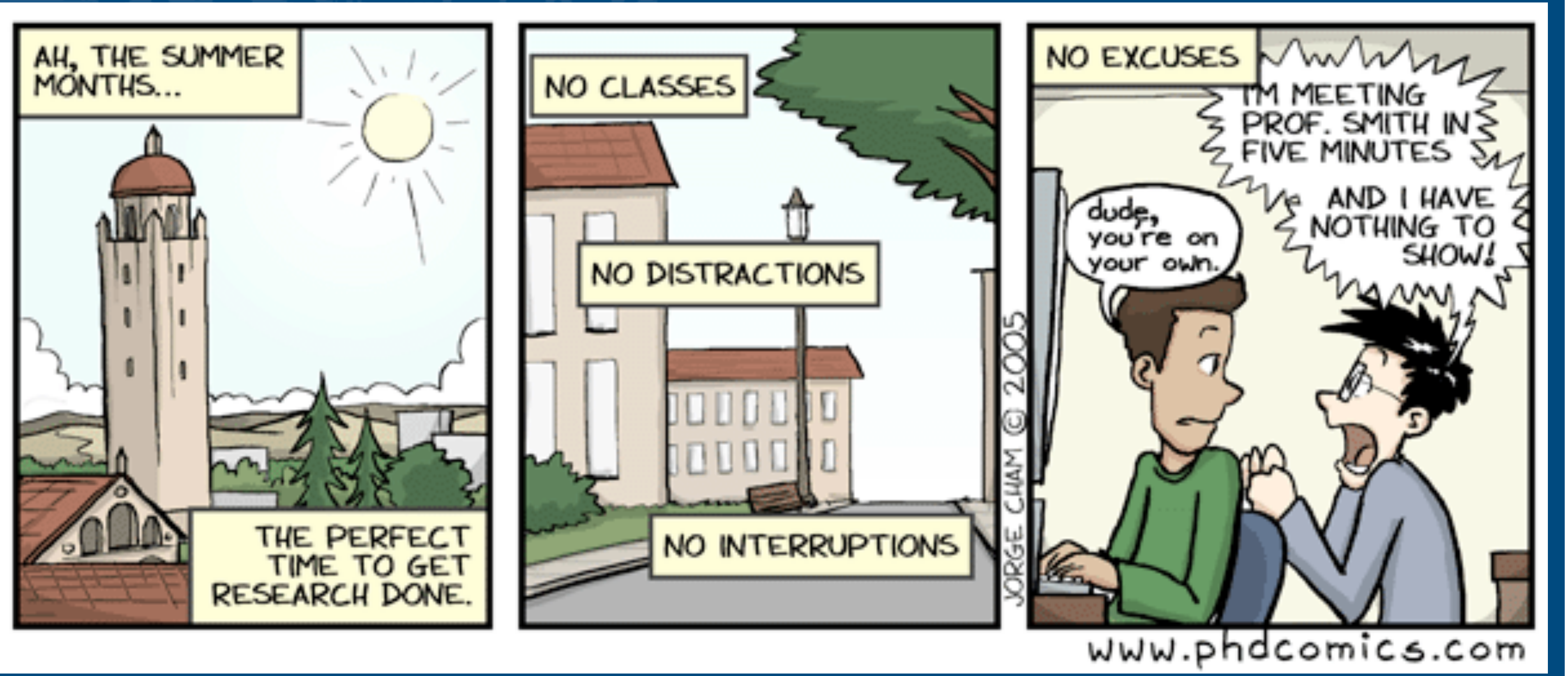
Start Working Early!

- Write, write, write…
- Ask others for comments



Work Hard in the Summer



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Quotes from Steve Jobs

- “ I'm convinced that about half of what separates successful entrepreneurs from the non-successful ones is pure perseverance. ”
- “ Creativity is just connecting things. When you ask creative people how they did something, they feel a little guilty because they didn't really do it, they just saw something. It seemed obvious to them after a while. ”