

Inside the Decision Process: Notes from CVPR 2020

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CVPR 2020 Workshop: How to write a good review?

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Context on the paper
decision process



Initial Reviews

Submissions Users Settings

Discussion

Paper ID	1
Paper Title	A test submission
Track	CVPR2020

CMT DOES NOT ALLOW USERS TO TYPE IN CERTAIN CHARACTERS INTO A TEXT BOX THAT COULD BE INTERPRETED AS A COMMAND. CERTAIN CHARACTERS (FOR EXAMPLE, "< X") WILL ALLOW YOU TO SUBMIT THE TEXT SINCE THEY ARE NOT ALLOWED IN THE COMMAND LINE.

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Type text here and then press Enter to search

CVPR2020 Test AC *Date: 2020-02-07 20:27:58*
Topic:foo
bar

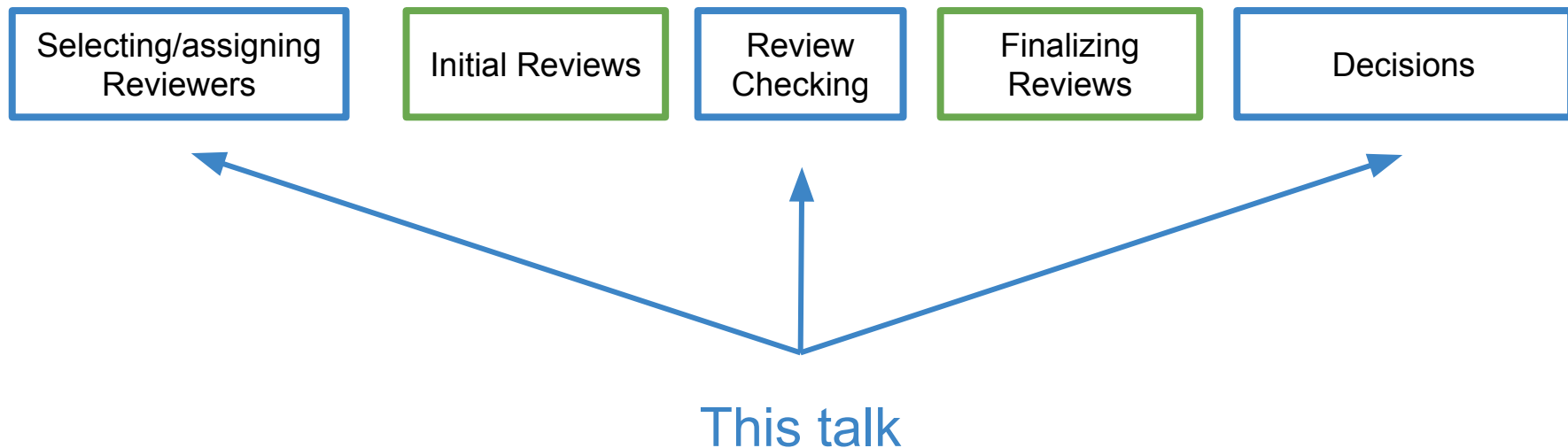
CVPR2020 Test Reviewer *Date: 2019-09-05 23:52:14*
Topic:great
That lunch looks delicious.

Final rating: Weak accept

...

Finalizing Reviews

What happens outside of these phases?



Selecting / Assigning Reviewers

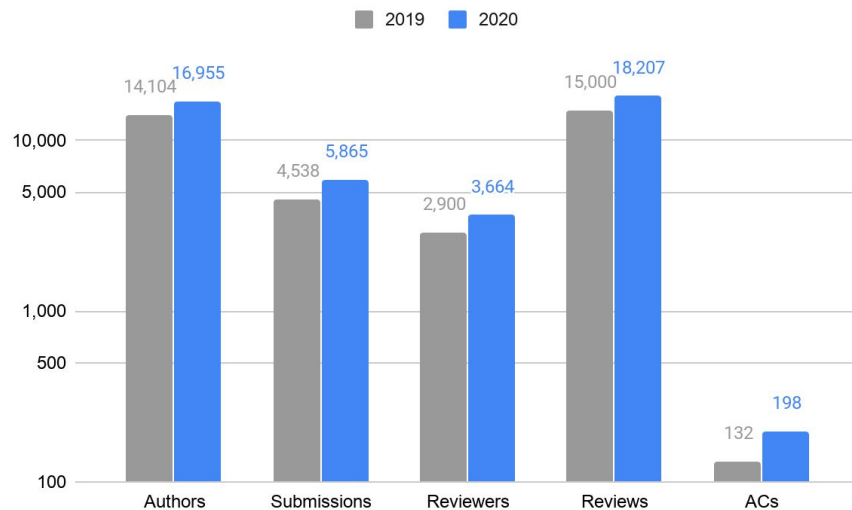
How does CVPR choose reviewers?

How does CVPR assign reviewers to papers?

Participants

- **16,955 authors**
 - 20% increase
- **6,424 registered submissions**
 - 24% increase
- **5,865 valid submissions**
 - 29% increase
- **3,664 reviewers**
 - 26% increase
 - **18,207 reviews**
 - 21% increase
 - 3+ reviews for each valid submission
 - ~5 papers per reviewer

2020 vs 2019 (log scale)



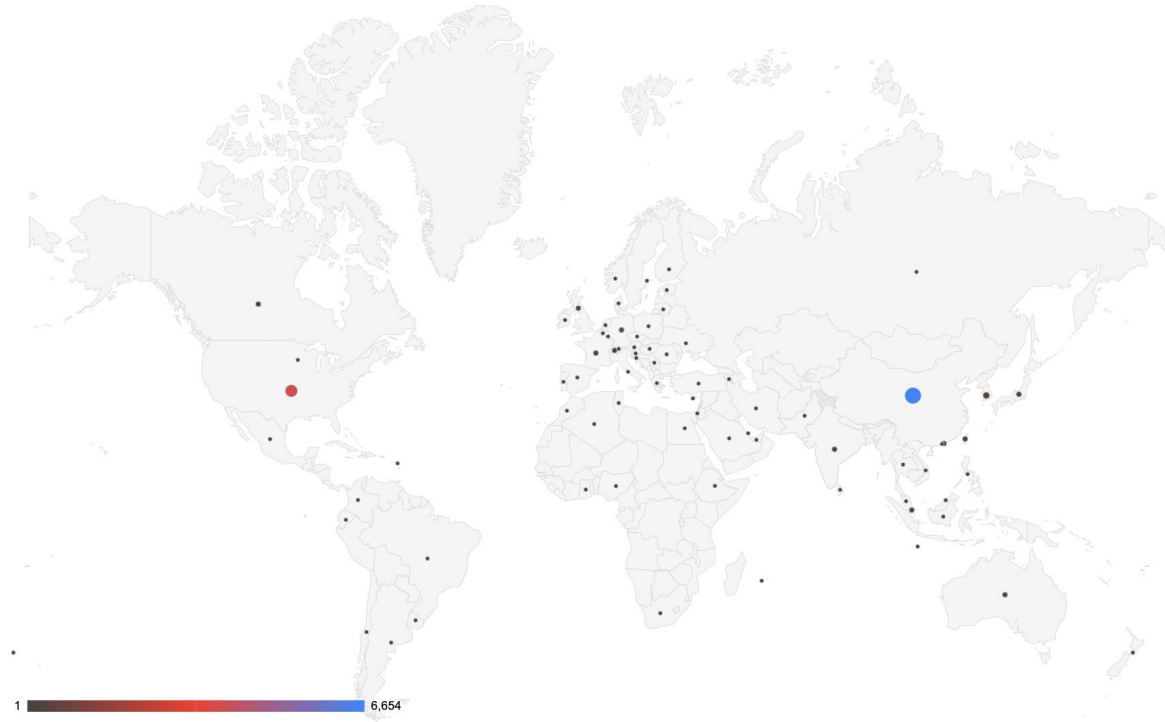
Finding Reviewers

Growth in field makes this a challenge -- do you have 3664 friends who can review CVPR papers?

Geographic diversity a concern, are we recruiting broadly enough? Growth of interest in AI, need a growth in reviewers.

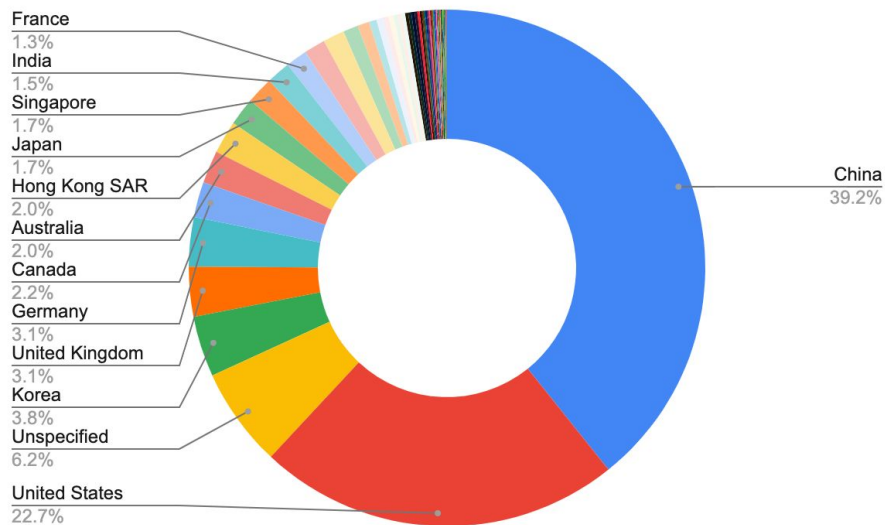
Typical qualification as reviewer is having published at CVPR/ICCV/ECCV recently (or related fields such as SIGGRAPH, NeurIPS, ICRA, ...)

Author Distribution

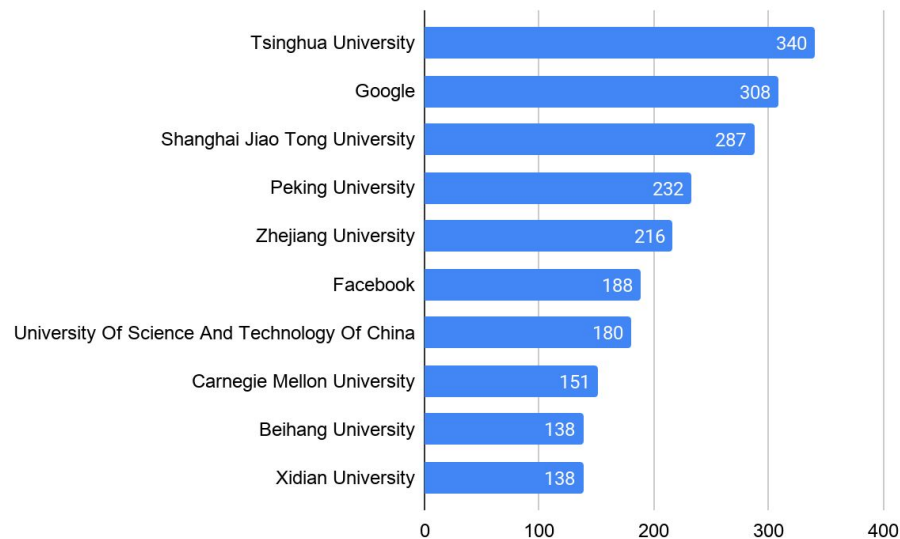


Author Distribution

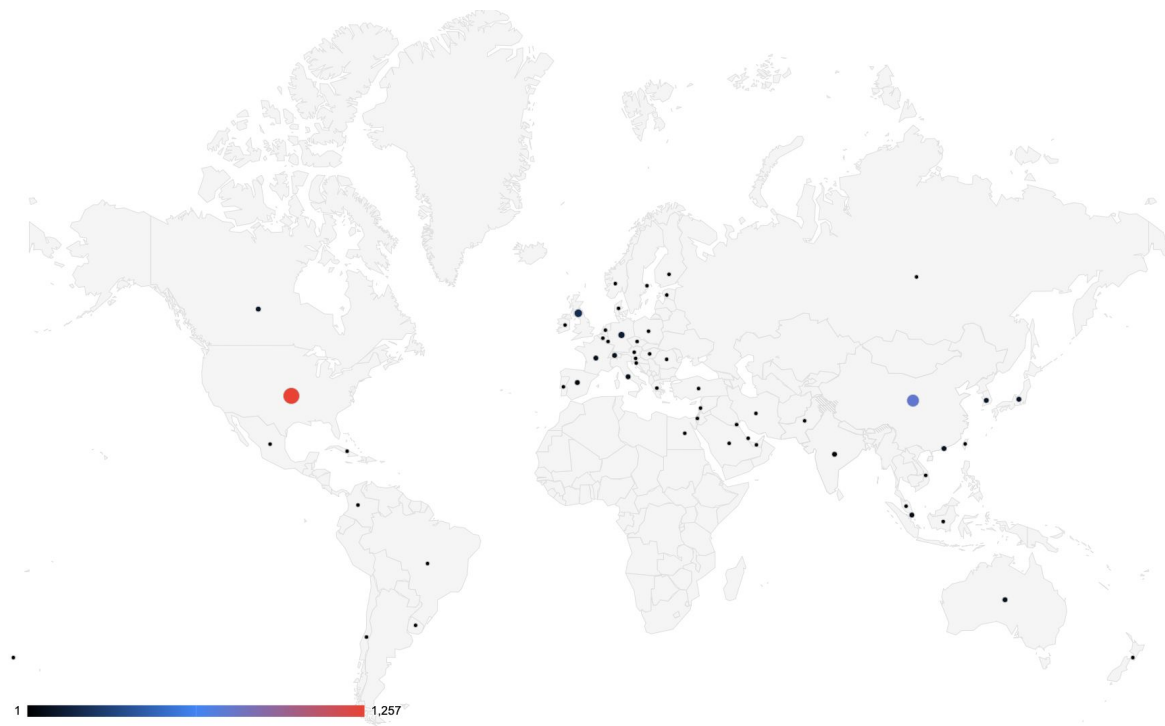
Authors by country/region



Authors by organization (top 10)

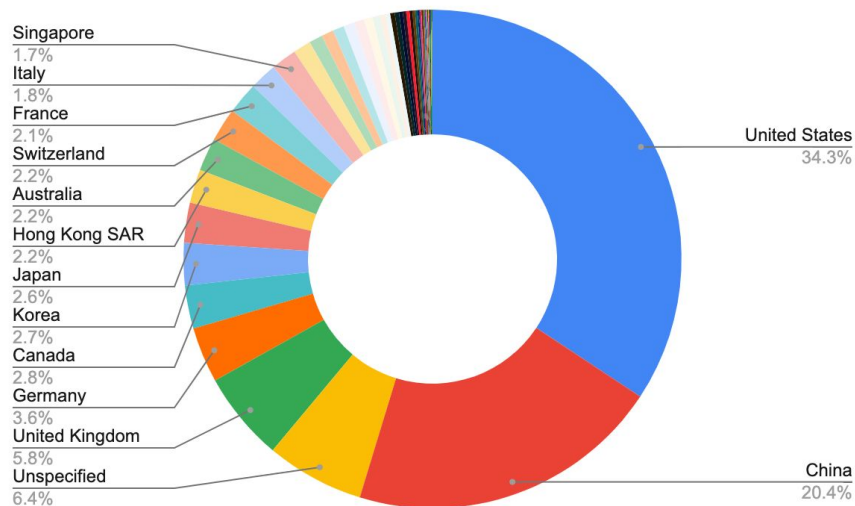


Reviewer Distribution

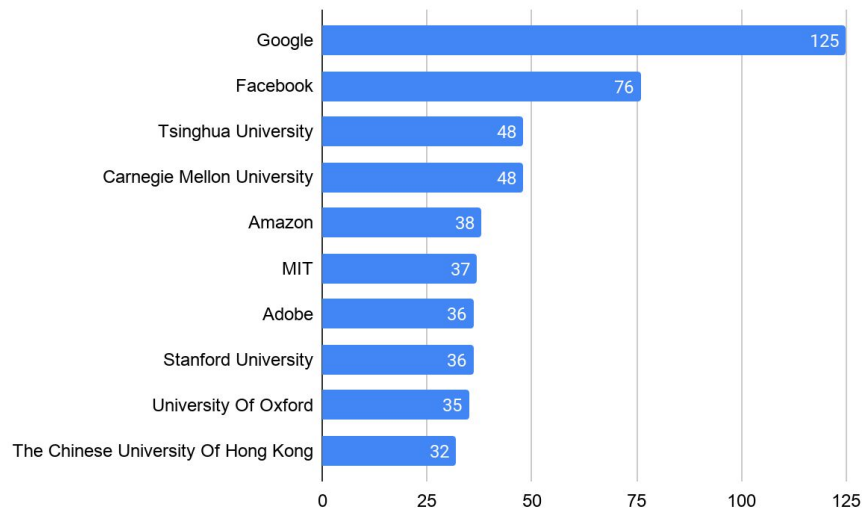


Reviewer Distribution

Reviewers by country/region



Reviewers by organization (top 10)



How are reviewers assigned to papers?

Constrained optimization

Inputs:

- Subject areas
- Toronto Paper Matching System (TPMS)
- Area Chair suggestions (7-10 per paper)
- Senior/junior
- Reviewer quotas

$$\max_A \sum_{(i,j)} W_{ij} A_{ij}$$

subject to ...

Assignments may not be “perfect”: express uncertainty in your reviews, do your homework to read previous work, participate in the discussions

What happens outside of these phases?

Selecting/assigning
Reviewers

Initial Reviews

Review
Checking

Finalizing
Reviews

Decisions

Review Checking

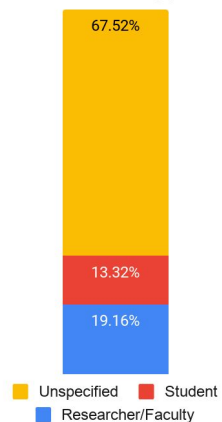
Area Chairs (ACs) check review quality

Find emergency reviewers for papers missing reviews / needing more input

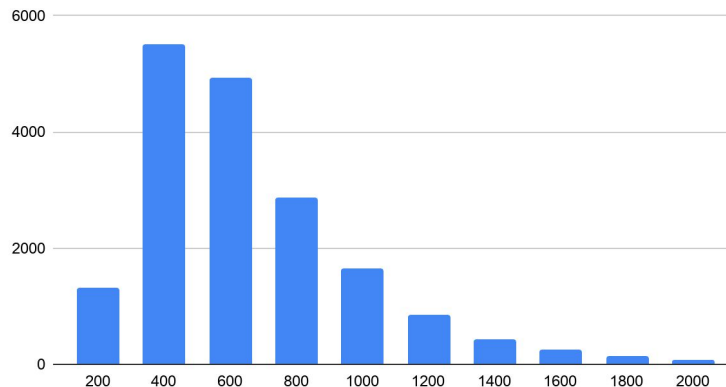
To all emergency reviewers: thank you, thank you, thank you, thank you, thank you

Review Distribution

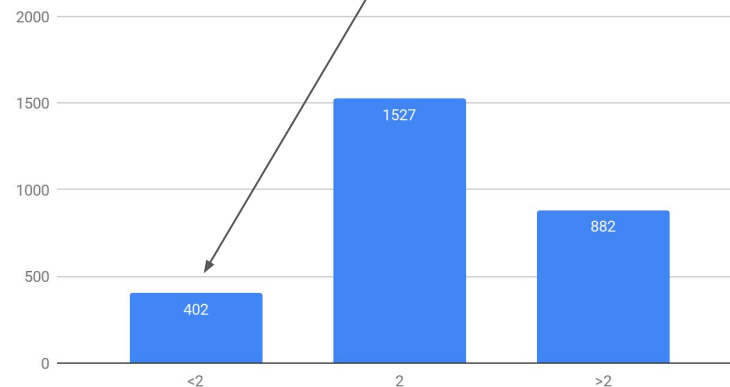
Reviewer type



Review word count (median= 482)



Reviewer rating (mean = 2.12)



14% of rated reviews were tagged as insufficient by ACs

Reviewer Rating Scale:
1 - Failed to Meet Expectations
2 - Met Expectations
3 - Exceeded Expectations

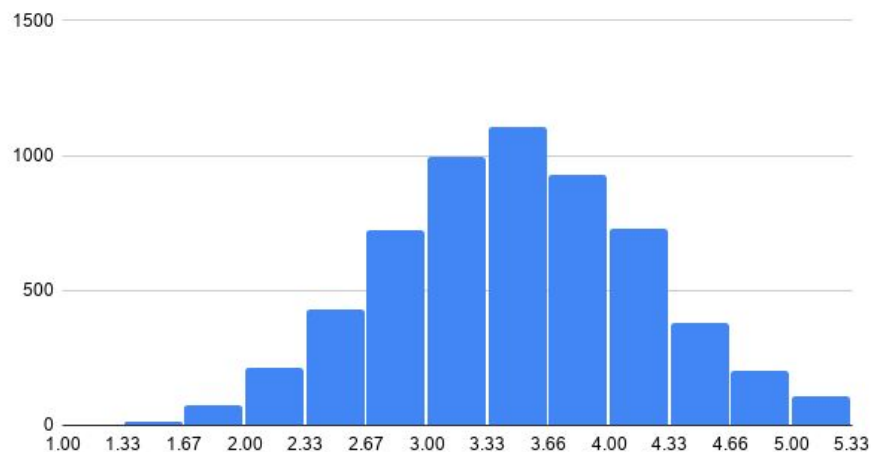
What happens during the discussion phase

ACs encourage discussion amongst reviewers, reviewers read each others' reviews, debate points

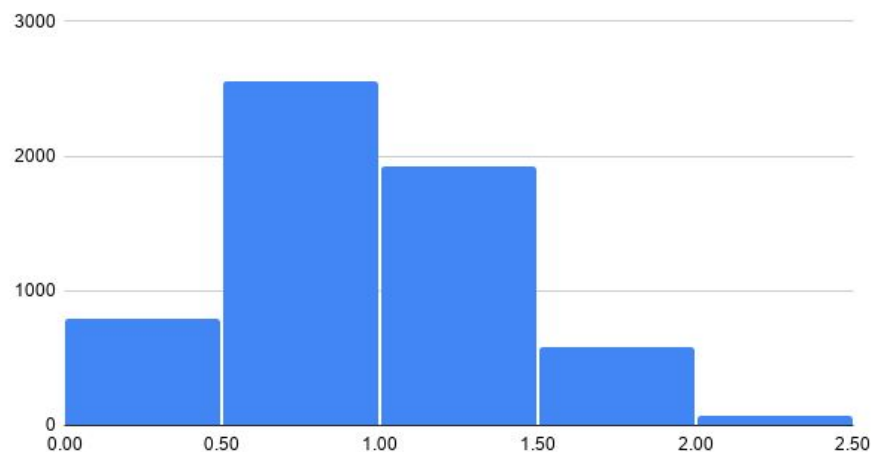
Think about points that are misunderstood, be open-minded, think about supporting strong/interesting work, make sure criticisms justified with solid reasons

Initial per-paper scores

Initial Score Means



Initial Score Stds

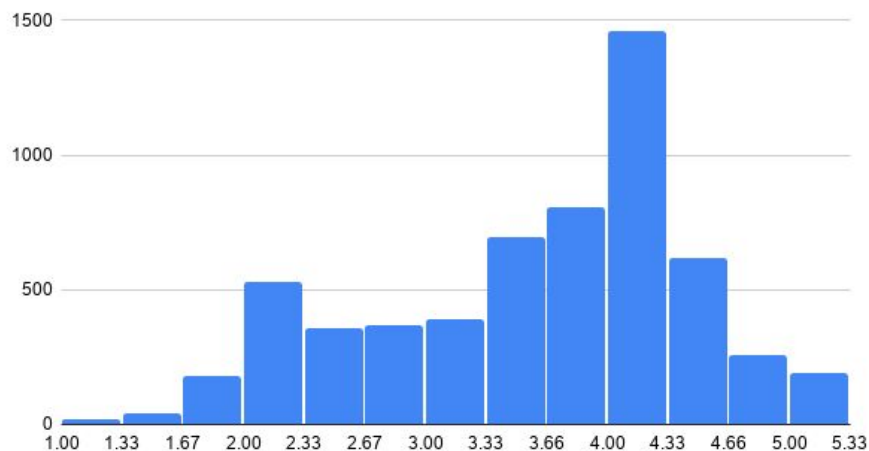


Score Scale:

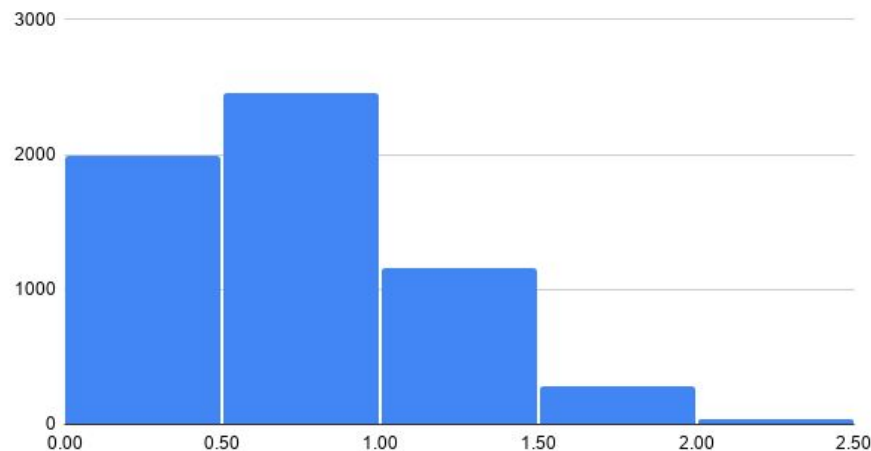
1 - Strong accept 2 - Weak accept 3 - Borderline 4 - Weak reject 5 - Strong reject

Final per-paper scores

Final Score Means



Final Score Stds



Discussion / review finalization is a VERY important part of being a reviewer

Significant changes occur, active participation needed

What happens outside of these phases?

Selecting/assigning
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Decisions

Making Decisions

Each paper has a primary AC

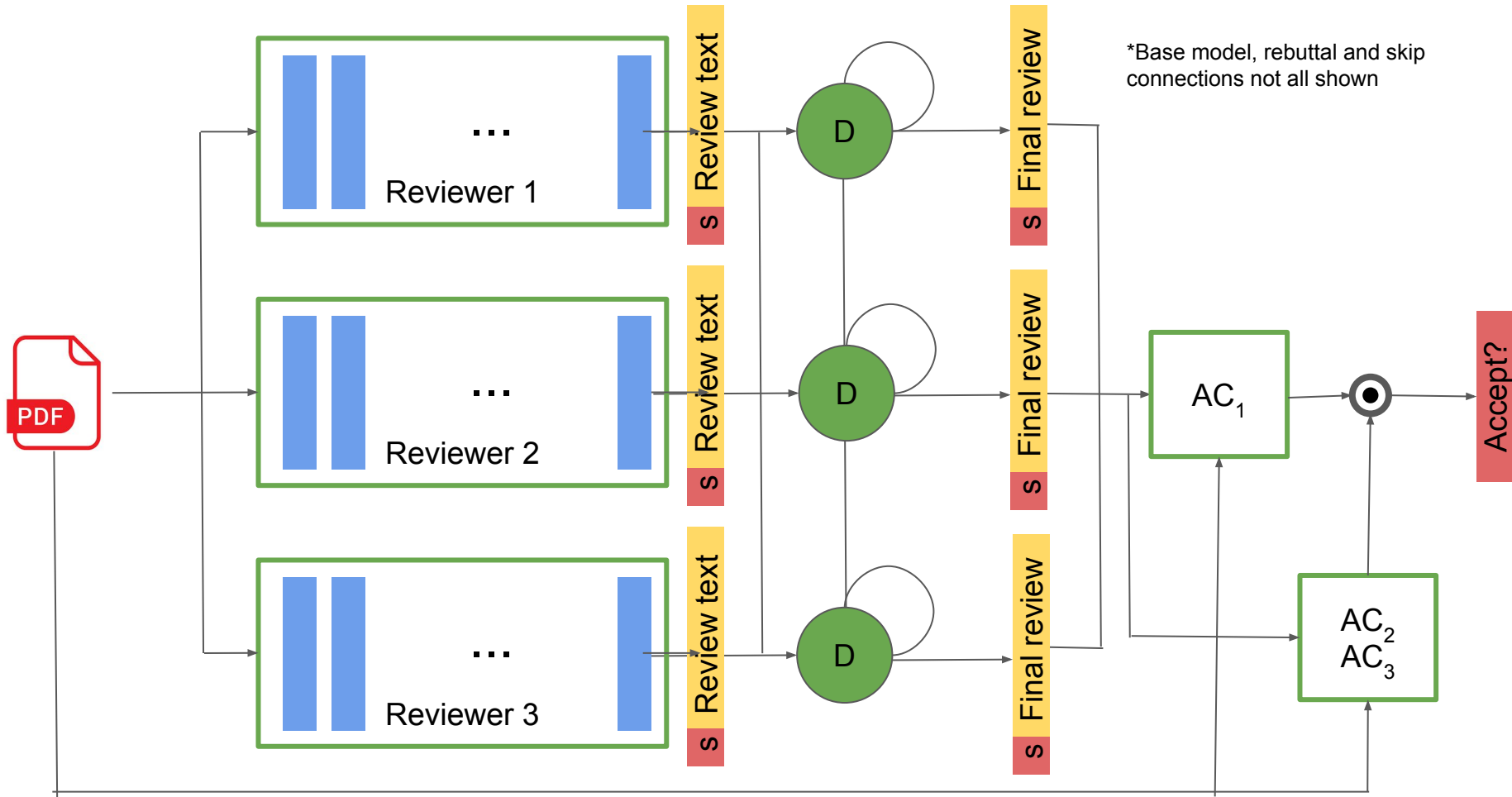
- ACs see paper, reviews, discussion
- ACs do not know the identities of the authors (double-blind)
- ACs do know the identities of the reviewers

ACs discuss papers in triplets (3 ACs working together)

Primary AC makes decision, requires sign-off from AC triplet

In difficult cases, (non-conflicted) expertise is sought outside AC triplet

Final decision is a non-linear function of the inputs (paper, reviews)



Each Reviewer block is an MLP with 10^{11} nodes
 Reviewer blocks do not share parameters

Bayes Risk with Review Scores

Initial Reviews	Acceptance Rate
No SA/WA, at least 1 B	2% (there are orals in this group)
At least 1 SR, at least 1 WA/SA	14%
1 SA, 1 B, 1 SR	18%
All borderline	26%
At least 1 SA, at least 1 WR/SR	44%

As a reviewer, your facts / arguments matter

Very important to explain the reasons behind your decision

Concluding remarks

Importance of reviews to the process

Need for more reviewers

Reviewing culture, constructive feedback

Quality debate and content of reviews lead to good decisions