

Criteria and Scrutiny

Computing Education Research

Kate Sanders, Joseph Maguire and Monica M. McGill, 3 November 2022, 1115 - 1215

Mapping the Landscape of Peer Review in Computing Education Research

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ABSTRACT

Peer review is a mainstay of academic publication – indeed, it is a social and professional topic – Computing education

CCS CONCEPTS

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Criteria and Scrutiny

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- **Seven computing education conferences:**
 - Australasian Computing Education conference (ACE),
 - ACM International Computing Education Research conference (ICER),
 - the conference on Innovation and Technology in Computer Science Education (ITiCSE),
 - the Koli Calling International Conference on Computing Education Research (Koli),
 - the Software Engineering Education and Training track of ICSE (ICSE SEET),
 - the International Conference on Informatics in Schools: Situation, Evolution, Problems (ISSEP),
 - and the ACM Technical Symposium on Computer Science Education (SIGCSE);

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- **Two computing education journals:**
 - ACM Transactions on Computing Education (TOCE),
 - and Computer Science Education (CSE);

Sources

Criteria and Scrutiny

- **Three conferences** in overlapping or related fields:
 - the International Conference on Learning and Teaching in Computing and Engineering (LaTiCE),
 - the ACM CHI Conference on Human Factors in Computing Systems (CHI),
 - and the International Conference on Software Engineering (ICSE);

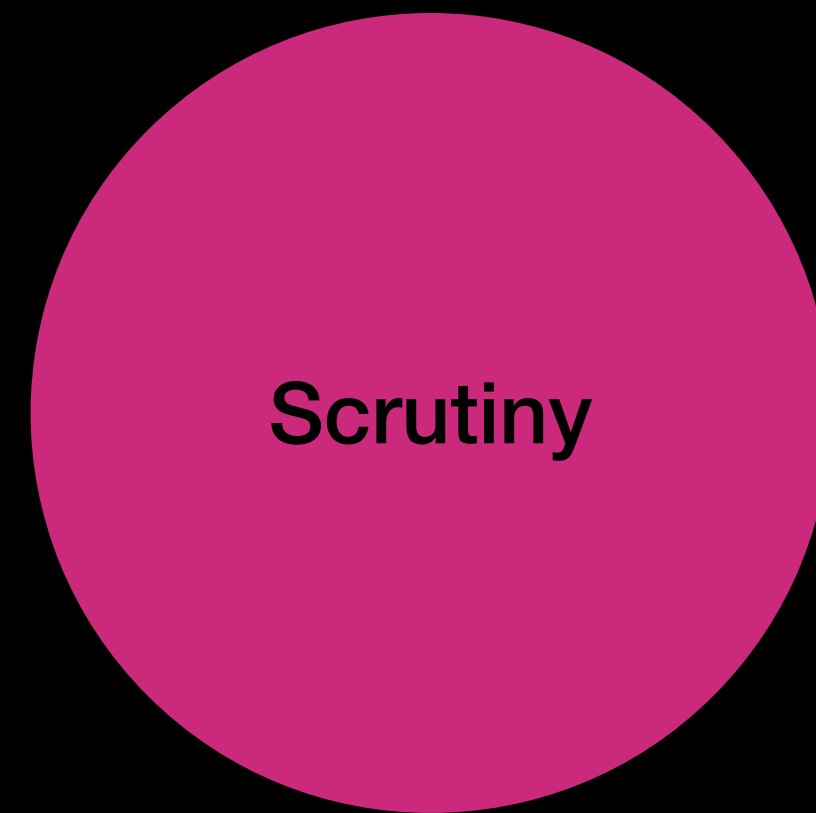
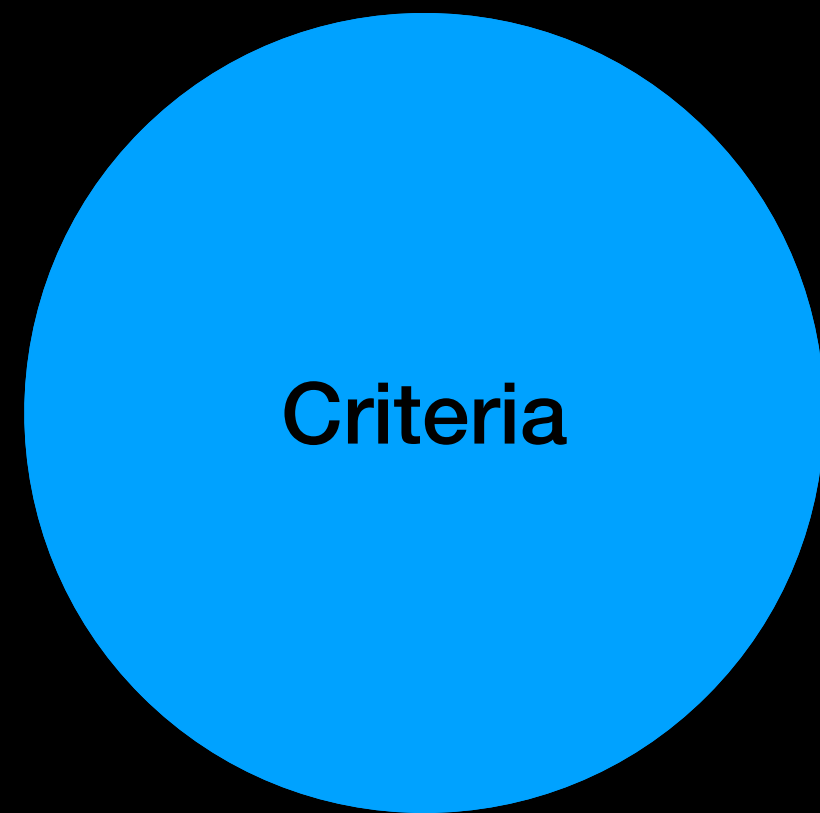
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Criteria and Scrutiny

- **Five journals** in overlapping or related fields:
 - IEEE Transactions on Education (IEEE ToE),
 - IEEE Transactions on Software Engineering (IEEE TSE),
 - IEEE Transactions on Learning Technologies (IEEE TLT),
 - The Journal of Engineering Education (JEE), and The Journal of the Learning Sciences (JLS).

Overview

Criteria and Scrutiny



Criteria

META-CRITERION	EXPLANATION
Scope	Do the topics covered in the paper fall within the scope of the venue?
Important Question	Is the problem or study addressed in the paper likely to be of interest or benefit to the community?
Situation in Prior Work	Does the paper clearly cite and build upon relevant existing literature? Is the coverage of current knowledge satisfactory, and is the paper situated within this context?
Sound Methodology	Was the study designed and implemented appropriately? Does the analysis of the results adequately support the claims made?
Sufficient Detail	Does the paper provide enough detail to properly implement, replicate, or assess the research or practice?
Contribution	Do the findings or ideas presented enhance the understanding or practice of the community?
Application	Are the findings or ideas in the paper likely to affect the practices of the community?
Presentation	Is the paper well written, organized, and structured? Do the tables and figures (if any) enhance the text, and are they readable, well designed, and integrated with the text?
Ethics	Includes issues such as plagiarism, ethical treatment of animals and human participants, honestly acknowledging limitations of the work, etc. See Section 6 for further discussion.

So most program committee meetings are huge philosophical debates around what is the difference between an experience report and a research paper. Can experience reports ever be research? What's the line between those two? Does there need to be a line between those two? What is a sufficient amount of evidence or a sufficient amount of novel discovery to publish something? When is a replication novel and when is a replication not novel? So that's where those debates happen...
I think that's valuable.

Conference Chair 4

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I think that's valuable.

Conference Chair 4

Academics don't agree on what constitutes good research...
Even within a community, there's disagreement about that.
And that disagreement is part of the progress of academic
communities, as we discuss and debate and we reconsider
and we toss out old ideas and start new ones. And so criteria
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And that **disagreement is part of the progress of academic communities, as we discuss and debate and we reconsider and we toss out old ideas and start new ones.** And so criteria are where that debate happens.

Conference Chair 4

I think that we need to remember that conferences do much more than just publish papers. And I think that the increasing focus on... what one considers to be very high-quality scholarship can converge on what everybody agrees is a norm for good scholarship. And that has a potential to exclude diversity of thought and therefore contribute to an overall paucity of the research field as a whole over time.

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Conference Chair 1

I don't think I've ever been aware of reviewers who say, all right, we will give this criterion three out of 10, and we will give this criterion eight out of 10, and we'll add them all up and come to a numerical score, and then we'll cut there. I think they always look at everything and make a holistic decision on papers on which they are undecided.

Conference Chair 3

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Conference Chair 3

I think that's just a matter of bravery in the Program Committee, to be able to stand up to the decision and say, OK, it was ... a good paper, but you didn't get in any way, because we didn't have the space, and we've balanced the program based on diversity of topics and other issues, and you just didn't make it in this year.

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[A] lot of times I say... this is promising, but submit it to a conference. And then... get some feedback there. I think this is a good conference paper. This is an archival quality journal, I keep saying. So, one of the things I'd like to put into our authors page more is... what is expected in archival quality journal versus conference paper.

Journal Editor 2

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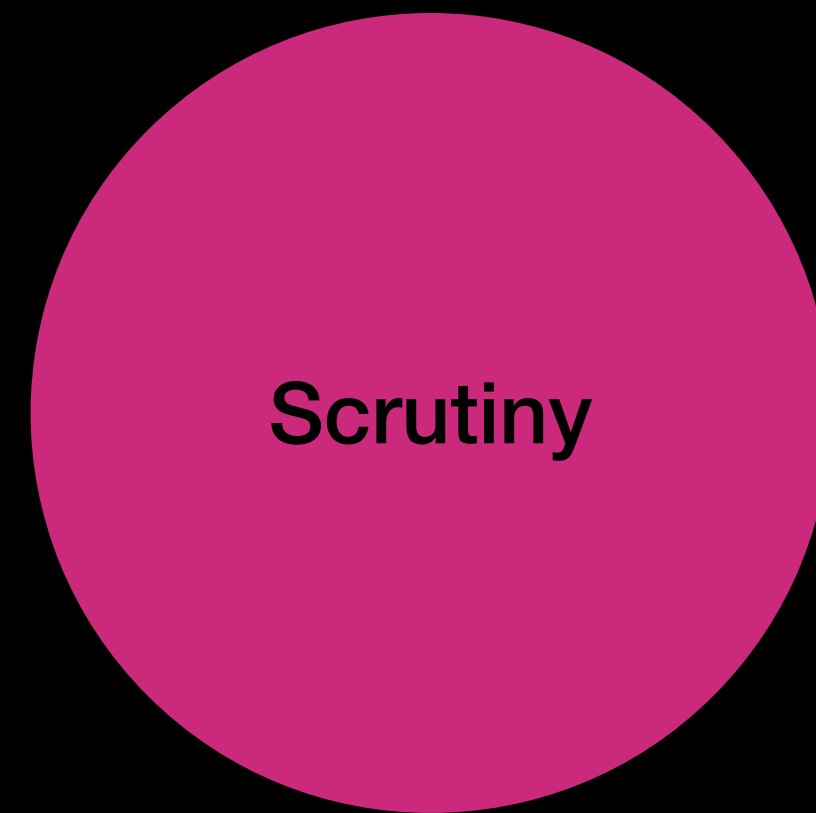
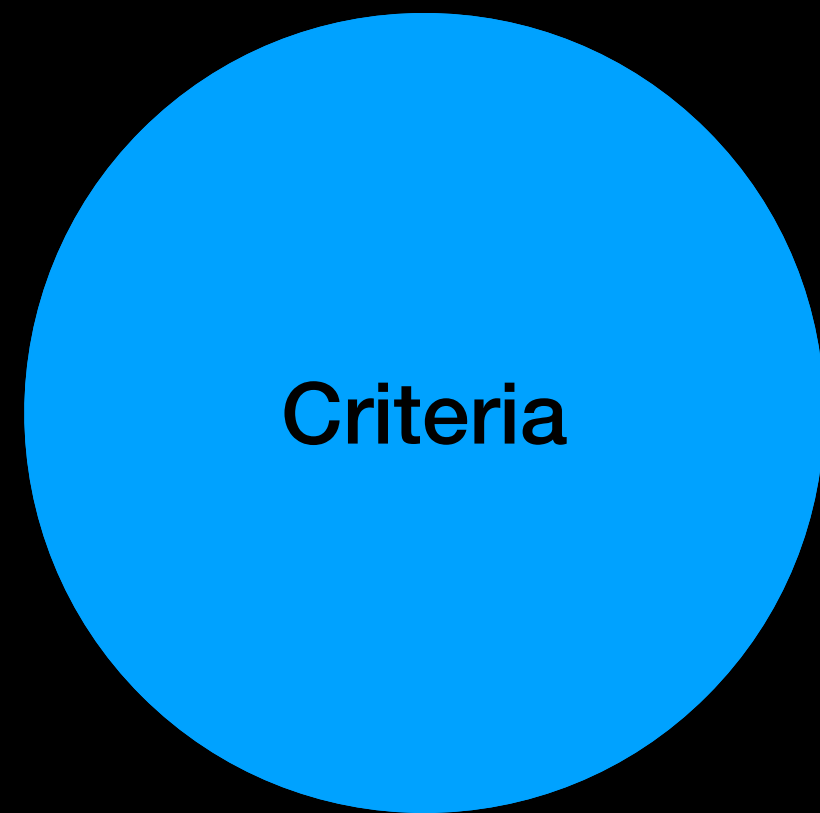
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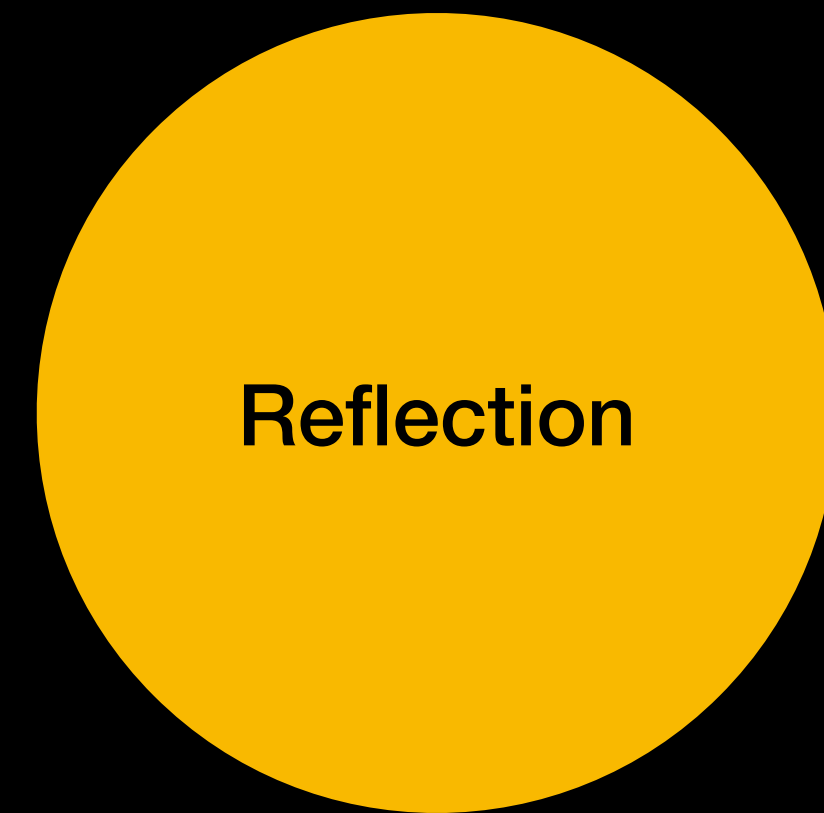
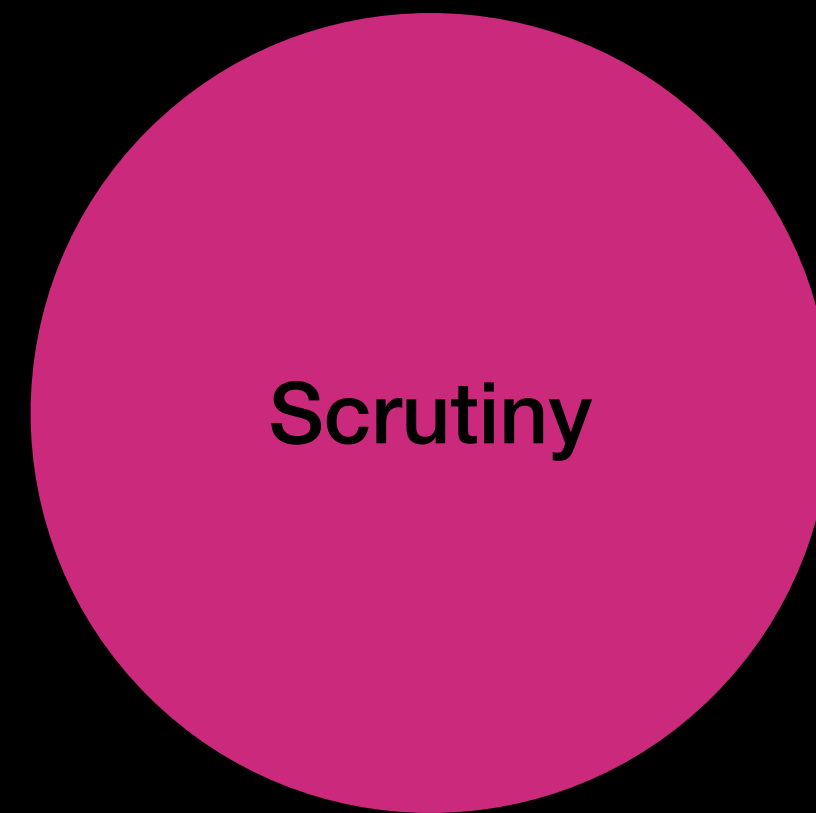
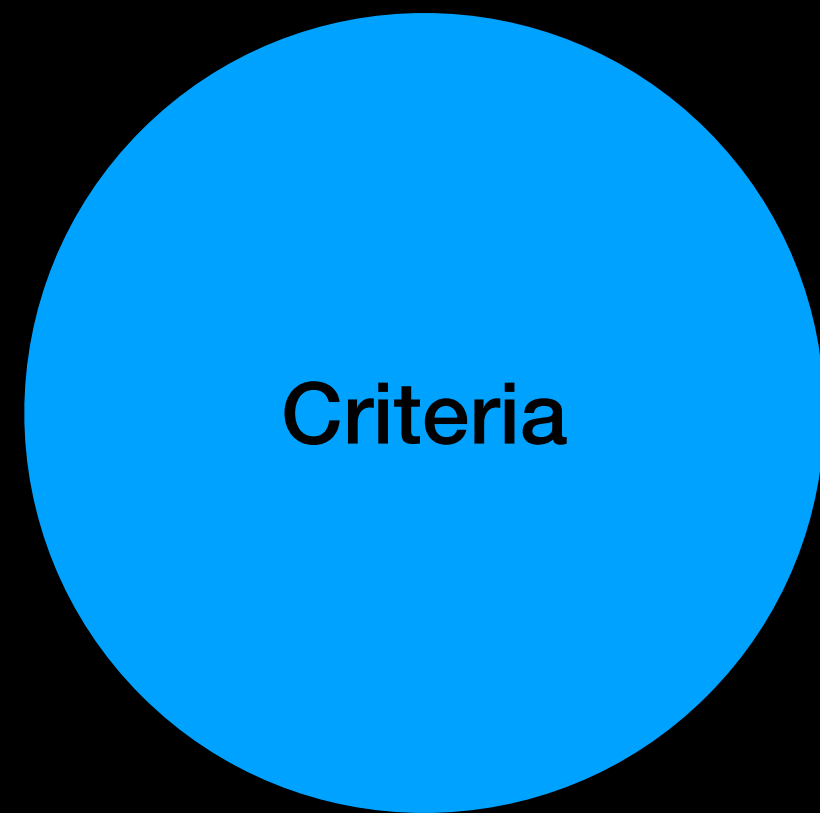
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Ethics

Social forces that I've talked about only function if there's transparency to reveal the identity of people. And so things like double-blind review remove some of those social forces... That's good in some ways, right, it can remove some bias, but it's bad in others, because it removes incentives to be humane.

Conference Chair 4

I see, as a general chair and as an editor of some journals, very destructive reviewing practices and very destructive reviews, where people have written ten things that they would never, ever write if they thought that the person receiving that review would know who they were. And I think there's a real lack of professionalism and accountability in that system that would be improved, in fact, by reviewers having to say who they were.

Conference Chair 1

I have done some reviews for journals where their review has been public and your name is attached to it. And it made me much more careful about the quality of the review that I did because I didn't want to have my name associated with something of low quality that was now visible publicly. And that's a good thing. It made my review better.

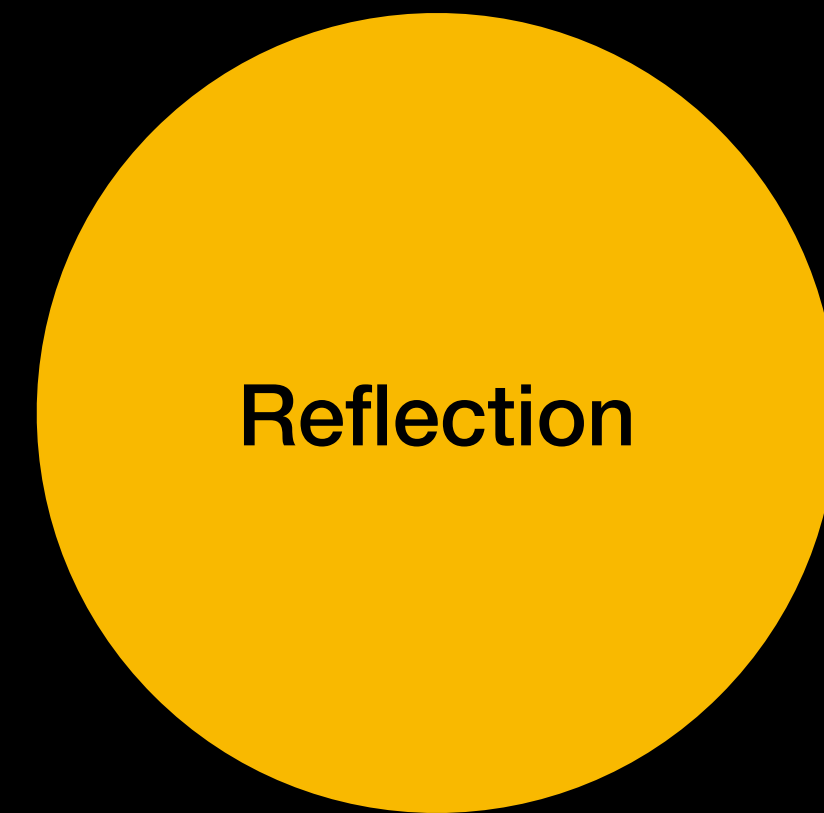
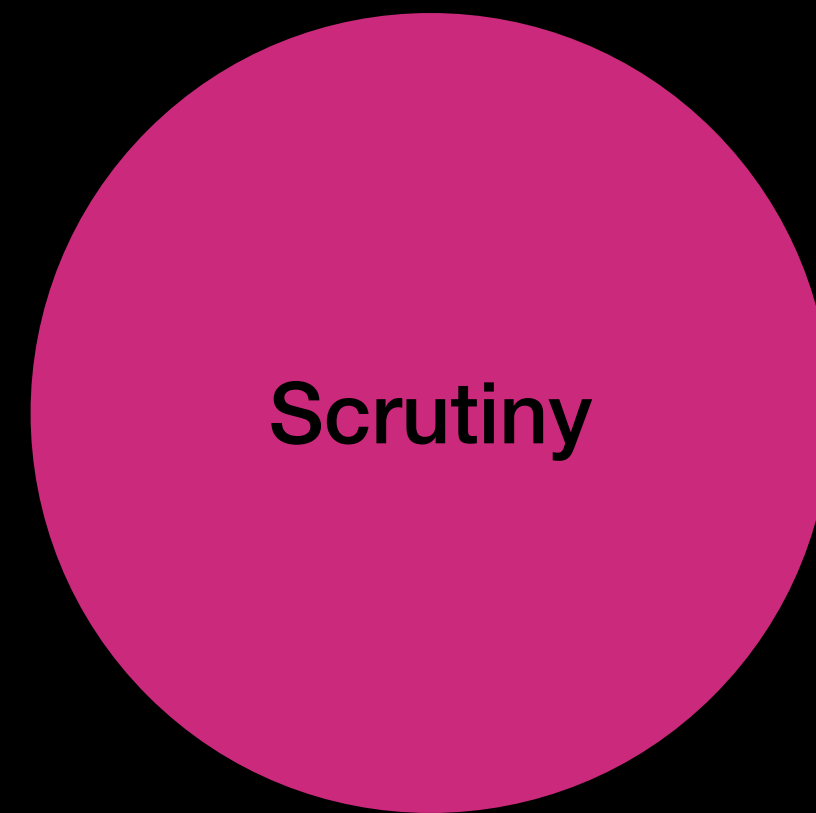
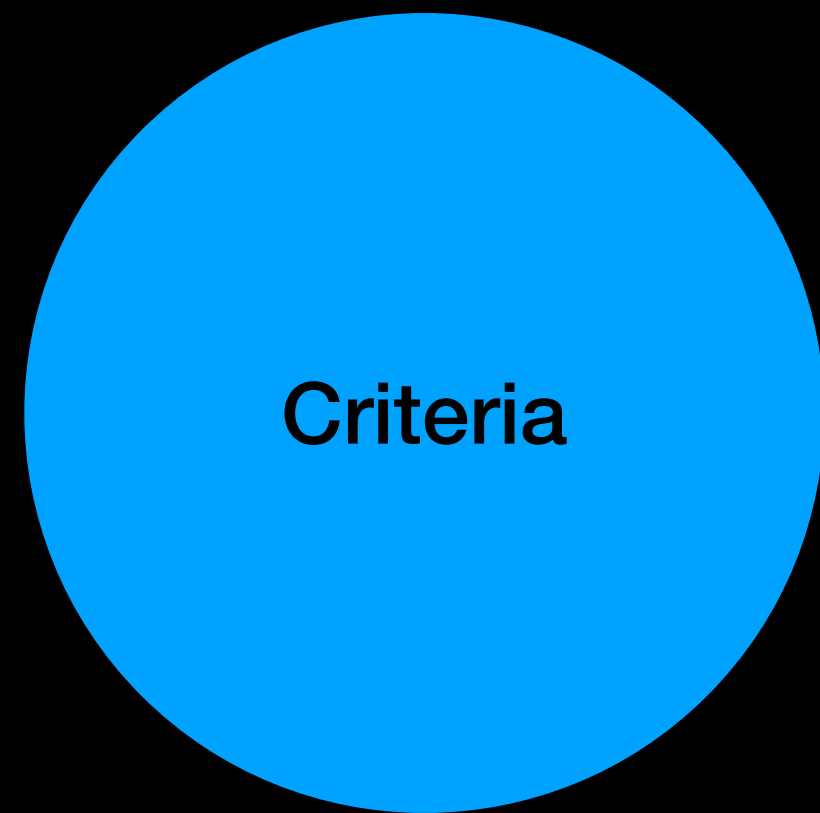
Conference Chair 7

But one of the consequences of that is that I was also perhaps hedging what I said more than I normally would, because you never know where these authors will end up.

Conference Chair 7

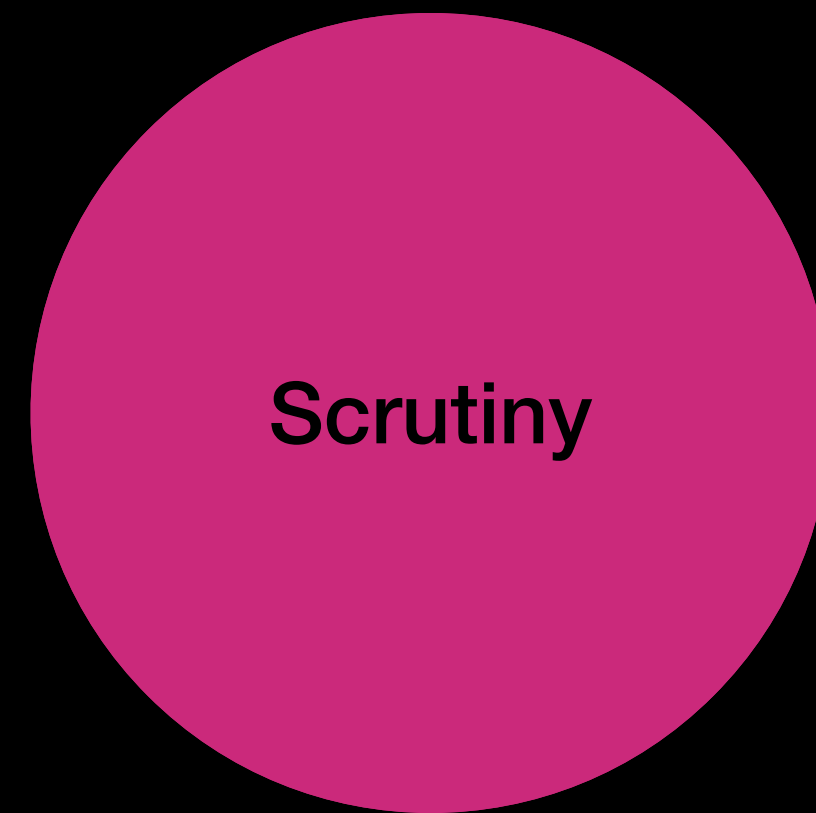
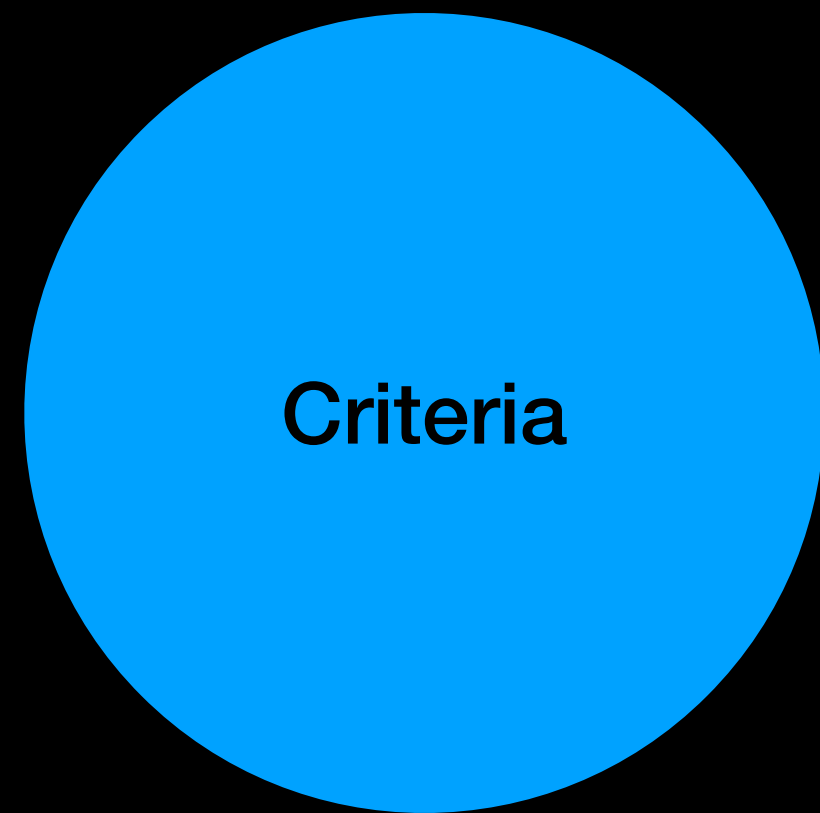
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Scrutiny

I don't remember ever seeing a call for expressions of interest in reviewing for [our conference]. I imagine that the chairs ask most of the reviewers from preceding years. I imagine they also look at the authors of successful ... submissions in recent years and say, ... that was a pretty good paper. Maybe we should ask them to review ... next year. But so far as I'm aware and as best I can recall, over the many years I've been involved ... the program chairs, the conference chairs have always gone into a huddle and then said ... 'Here's the list of reviewers.'

Conference Chair 3

I was invited to join that program committee, and that was considered, in software engineering, a very, very strong signal that I was a highly respected researcher ... You couldn't just join it no matter what, you had to be invited because you were trusted for your expertise.

Conference Chair 4

[The publisher] provides a lot of flexibility regarding how the editor in chief chooses the editorial board. I'm given the responsibility of choosing the editorial board. And I really don't get any feedback on that. I just have to make the process acceptable to the research community.

Journal Editor 2

How do we evaluate whether reviewers have done their job well? I think that you can certainly look at surface features of their work... Did they respond to these different facets that we were asking them to evaluate...

Conference Chair 4

But one of the things we can do is identify the reviewers who are doing a great job, and those reviewers who are not doing a great job, and provide them with a little bit of feedback afterwards.

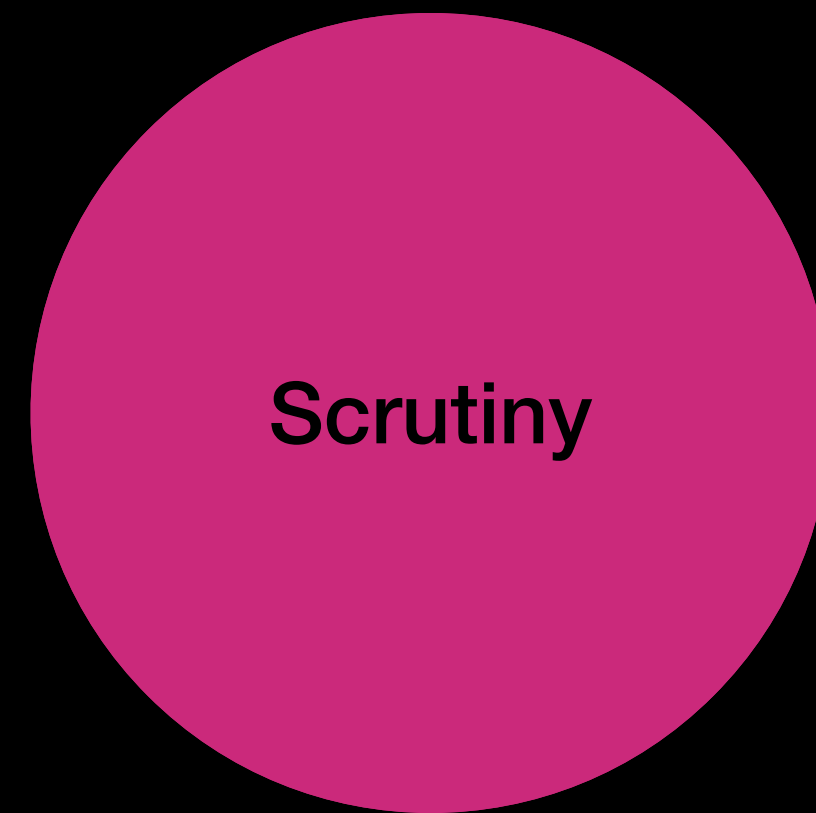
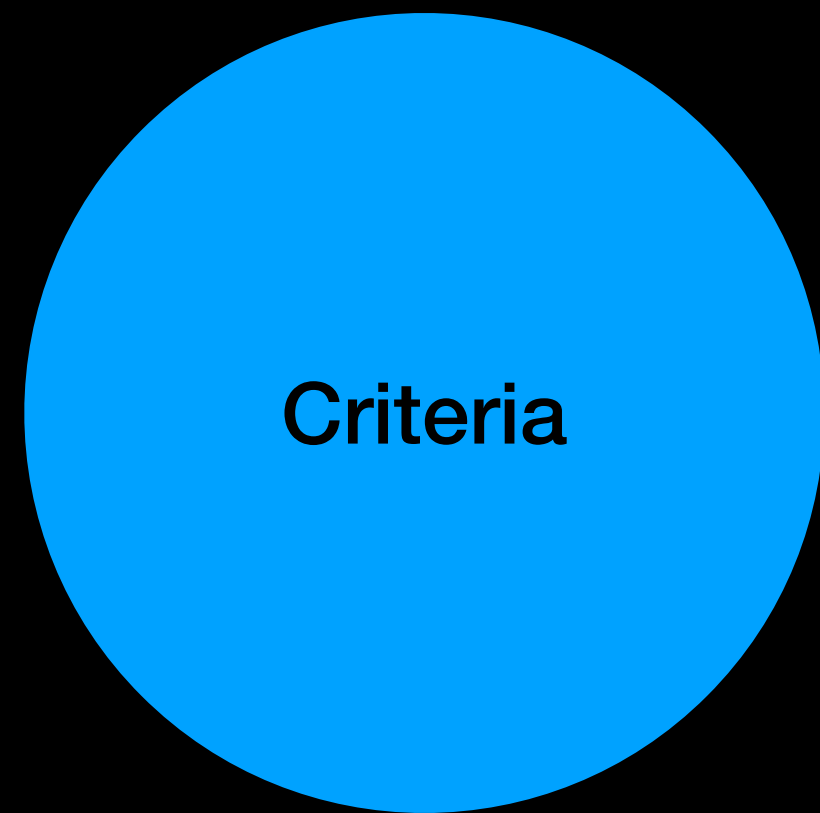
Conference Chair 7

I think that this year at [our conference] we tried to ensure that the meta-reviewers were checking the reviews to make sure they were humane and constructive. ... And there were other things like, if they noticed a reviewer that didn't do their job, ... we could delegate the task of nagging that reviewer to finish their work to the meta-reviewer rather than to us.

Conference Chair 7

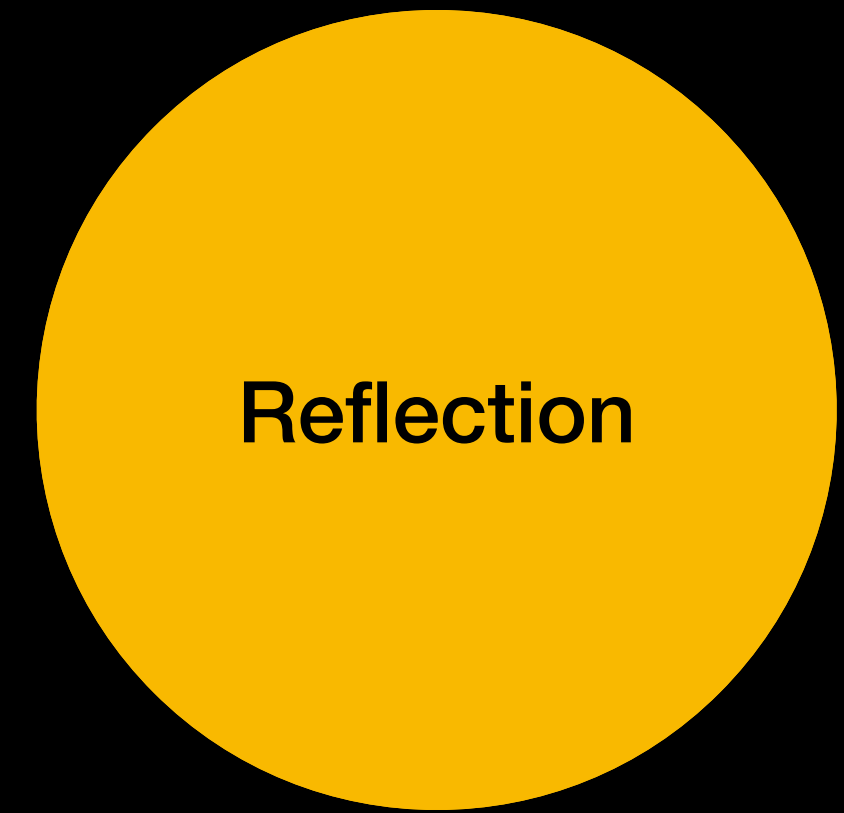
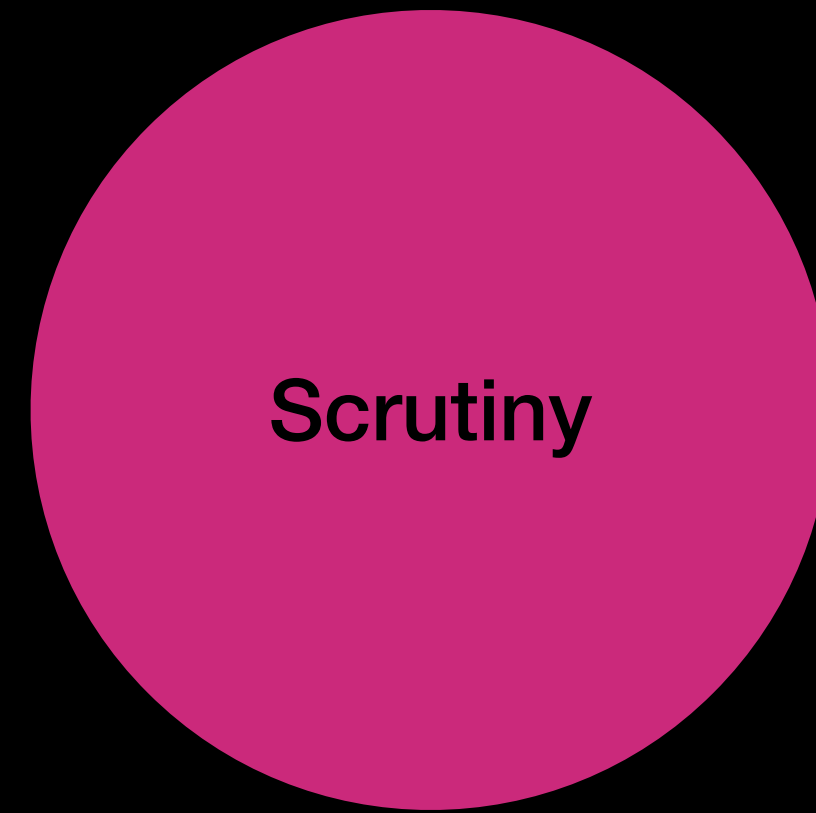
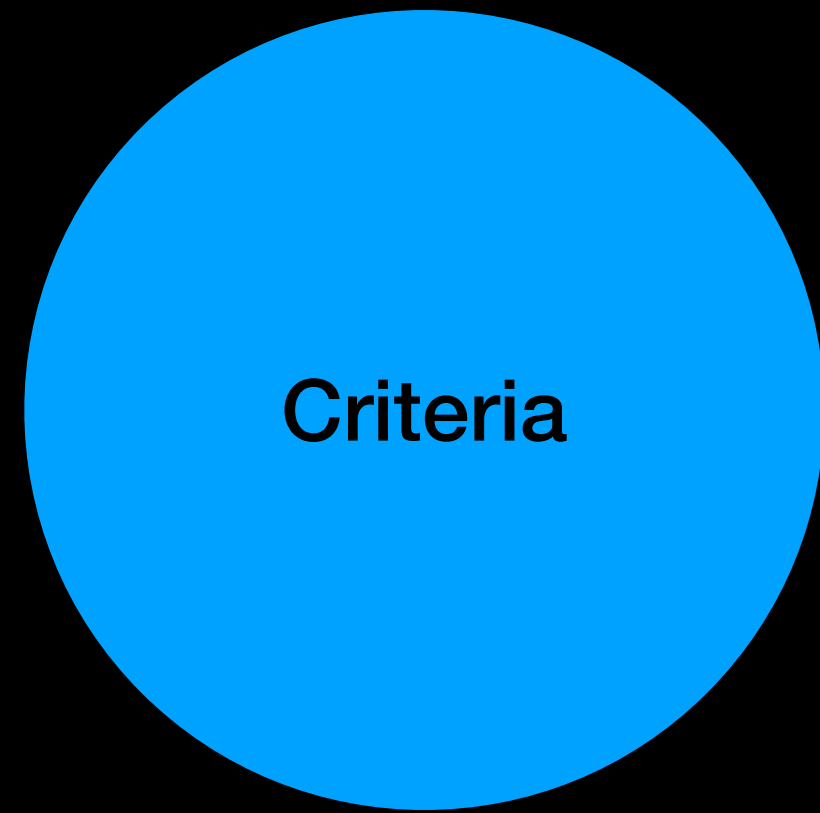
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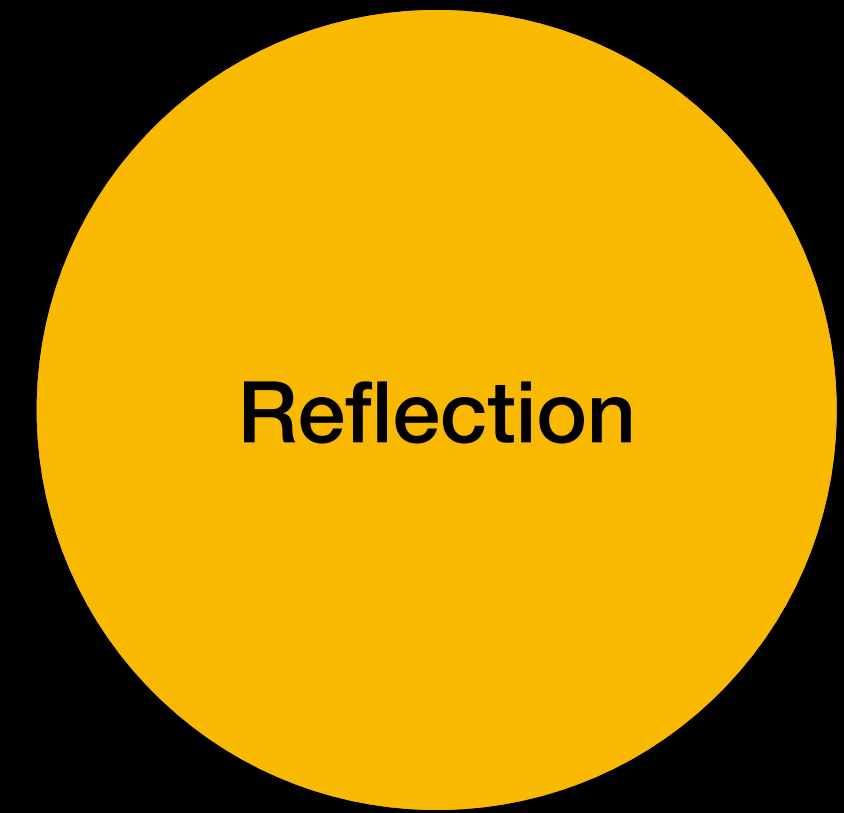
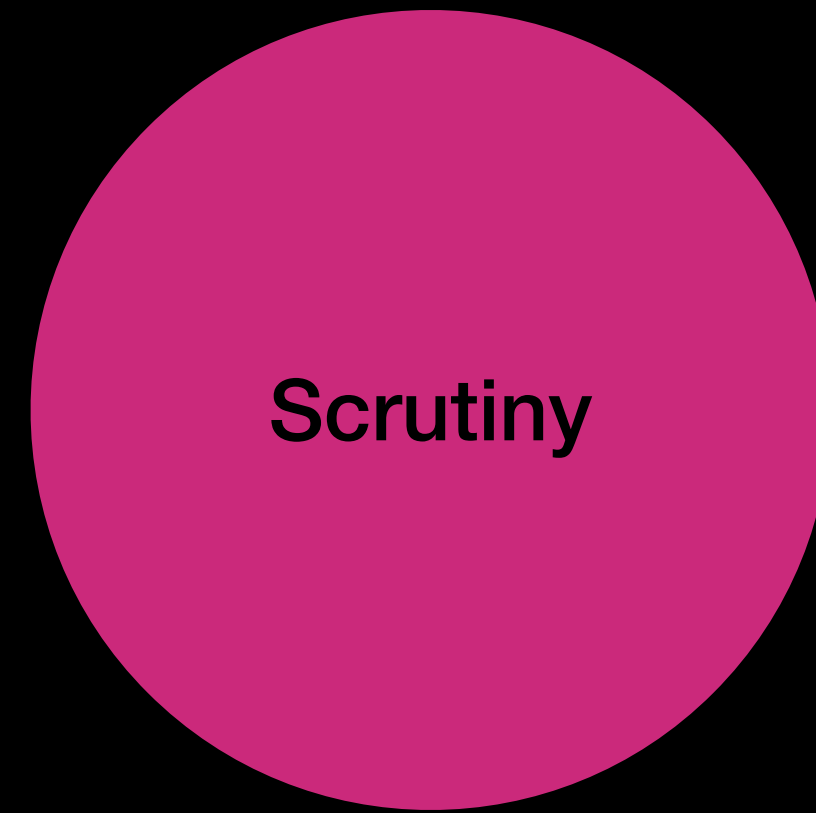
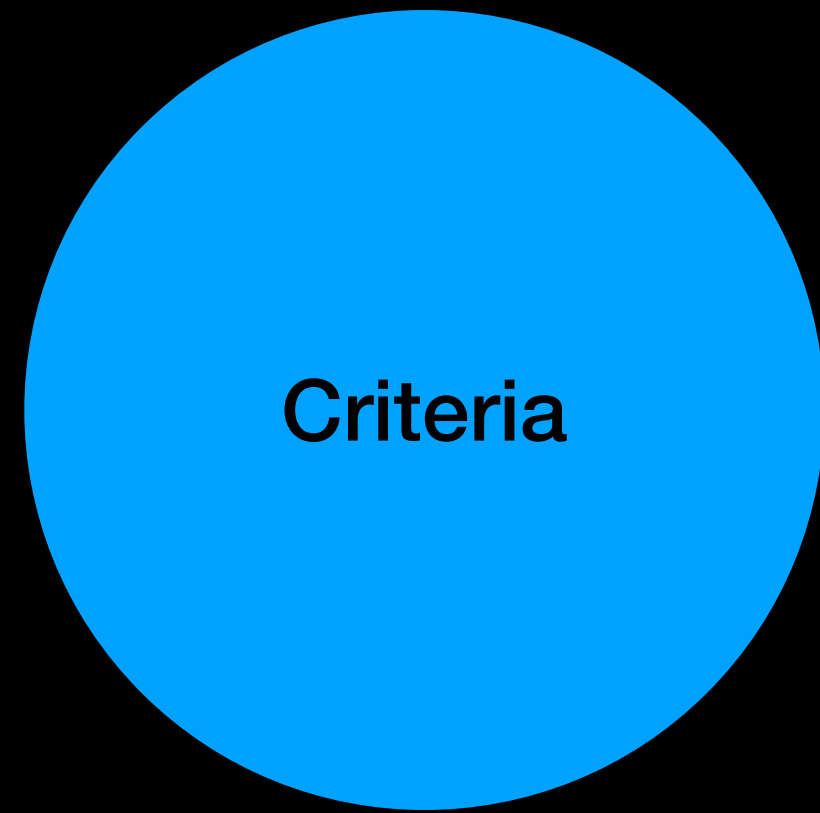
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Reflection

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