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PEER REVIEW  
2021

# AGENDA

- Discuss the current status of peer review
  - Current trends
  - COVID
- The “value” of peer review
  - Perspectives of peer reviewers
  - Perspectives of editors
  - Perspectives of publishers
- Peer review quality
  - What is it and how to obtain it
- Challenges and opportunities in obtaining peer review
  - Finding, training, and retaining good peer reviews
  - Recognition and rewards for peer reviewers
- Open Discussion

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# HISTORY OF PEER REVIEW

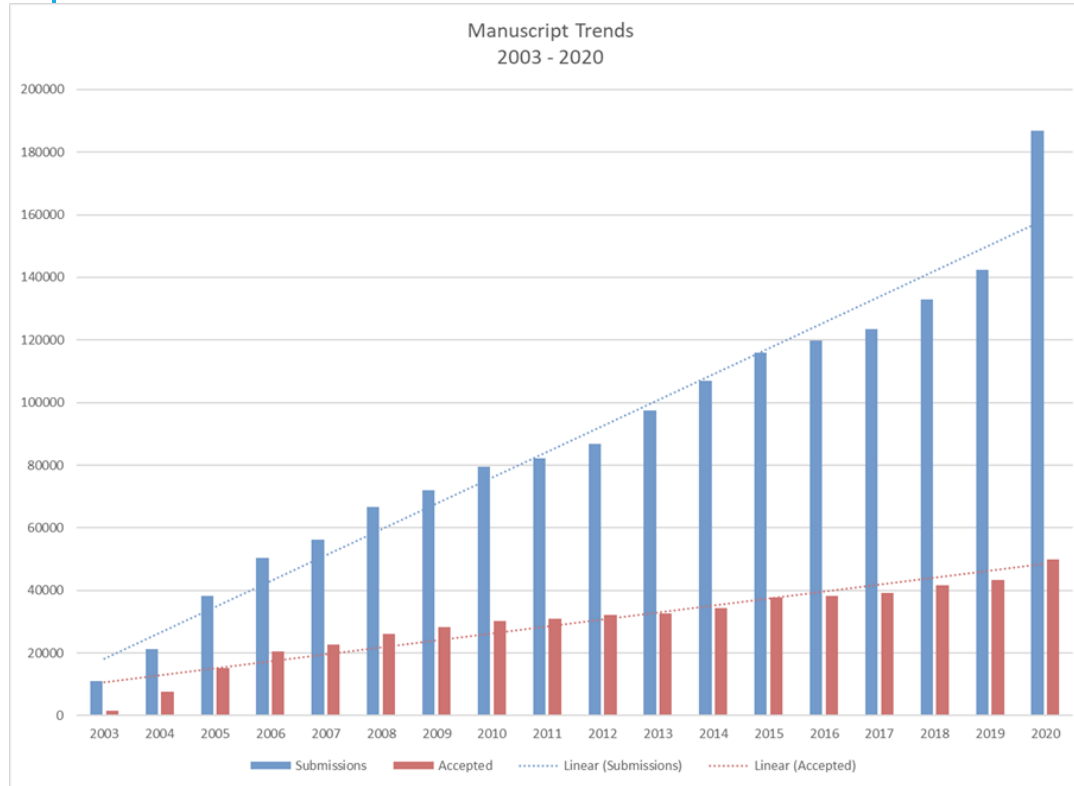
- First collection of scientific essays Journal des Savans, in 1655
- Royal Society of Edinburgh publishes Medical Essays and Observations
  - first peer reviewed collection
- Albert Einstein likely had only one paper (of 300+) articles peer reviewed
  - was rejected

# HISTORY OF PEER REVIEW

TABLE 1 | Major innovations in peer review—a timeline.

1732	<i>Royal Society of Edinburgh</i> uses peer review for the first time	2003	First article on <i>BMC Medicine</i>
1893	<i>British Medical Journal</i> adopts peer review	2006	First article on <i>PLOS ONE</i> using non-selective review
1959	<i>Current Anthropology</i> introduces Open Peer Commentary	2006	<i>Nature</i> experiment in community review
1964	<i>Nature</i> introduces peer review	2007	First article in <i>Frontiers</i> using non-selective interactive review and including names of editor and reviewers
1976	<i>Lancet</i> introduces peer review	2007	<i>Nature</i> launches commercial preprint server ( <i>Nature Precedings</i> )
1978	<i>Brain and Behavioral Sciences</i> introduces Open Peer Commentary	2010	<i>Shakespeare Quarterly</i> experiment in open review
1991	Launch of <i>ArXiv</i>	2011	<i>BMJ Group</i> launches <i>BMJ Open</i>
1999	<i>British Medical Journal</i> begins to reveal reviewer names to authors	2012	Launch of several new journals adopting open review ( <i>GigaScience</i> , <i>PeerJ</i> , <i>eLife</i> , <i>F1000 research</i> )
2000	<i>BioMed Central</i> (BMC) adopts open review for all its medical journals	2012	<i>Nature Precedings</i> ceases to accept new submissions
2001	<i>Atmospheric Chemistry and Physics</i> introduces two-stage review process in which papers are published as “discussion papers” before formal review	2013	<i>Nature Genetics</i> and <i>Nature Climate Change</i> offer double blind review

# GROWTH OF PUBLISHED SCIENCE



## Prior to 2015:

Growth: ~ 5% a year

## Today:

31% 1-year increase in submissions  
56% 5-year increase in submissions  
135% 10-year increase in submissions

15% 1-year increase in accepted manuscripts  
30% 5-year increase in accepted manuscripts  
66% 10-year increase in accepted manuscripts

# TYPES OF REVIEW

- No peer review
- Pre-publication peer review
  - “Classic” peer review
- Post-production peer review
- Mixed process (review takes place in several phases before and after publication)

# “CLASSIC” PEER REVIEW



Assesses the suitability of manuscript for publication, and provides feedback to authors, helping them to improve the quality of their manuscripts



Follows formal procedures and assessment criteria



Takes place before publication



Is highly selective (with biases)



Assesses manuscript in terms of novelty and importance to the field



Is conducted by editor and with oversight



Concludes with a publication decision to the authors



# ADVANTAGES OF “CLASSIC” PEER REVIEW

- Anonymity to allow for expression of critical views without retaliation
- Lack of interaction among reviewers prevents high prestige or forceful reviewers from dominating the review process
- Authors benefit from being published in high prestige journals
- Effective mechanism for selecting articles likely to attract a large number of citations
- Improves the quality of the publications, filters out low quality work, catches errors, improves writing, and provides the readers with a useful signal of quality
- Measure of scientific productivity

# CRITICISMS OF PEER REVIEW

- Slows down the publication process
- Unreliability between reviewers
  - Mixed messages
- Inability to detect errors and fraud
  - Better today
- Unethical practices in the process of peer review
  - Editor's power
  - Reviewers (“self serving”, “copying work”)
- Lack of recognition of generally unpaid reviewers
- Biases (see next slide)

# PEER REVIEW - BIASES

- **Content-based bias**
  - Against specific categories of papers
  - Reviewers/editors want the articles to cite their work
- **Confirmation bias**
  - Tendency to gather, interpret, and remember evidence based on beliefs or perceptions
- **Conservation bias**
  - Against innovative or landmark research
  - Threatens scientific progress
- **Publication bias**
  - In search of the positive p
  - Against replication studies
- **Bias of conflict of interest**
  - Critical of enemies, favorable toward colleagues/friends
- **Bias on against the authors**
  - Against specific categories of authors (gender, nationalities, geography)



# HOW PEER REVIEW IS CONDUCTED (CURRENT)

# BLINDING

- Double Blind
  - Reviewer and author are unaware of each others identity
- Single Blind
  - Reviewers aware of author identity only
- Open (Reviewer and author aware of each other)
  - Identities only
  - Fully open

# COVID CONSIDERATIONS

# DISCUSSION



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Researcher

Published  
author

Peer  
reviewer



SO YOU WANT TO BE A PEER  
REVIEWER — WHY?



# PEER REVIEWER ROLES AND VALUE

- ROLES

- If you are an author, you will be asked to be a peer review
- Often scholars are bombarded with requests to review
- How does one choose to do a review

- VALUE

- Contribute/participate in science
- Altruism
- Learning/Know what the field is doing
- Promotion/tenure
- For credits or rewards ...

# EDITOR ROLES AND VALUE

- Roles
  - Find peer reviewers
  - Help peer reviewers navigate the review process
  - Mitigate COI and biases
  - Assess the quality of the review
  - Provide feedback to the reviewers
  - Suggest or provide rewards to reviewers for reviews

# EDITOR ROLES AND VALUE

What is the value of peer review  
in the Editor's perspective?



# PUBLISHER ROLES AND VALUE

## ROLES

- a) Set up systems to allow editors to obtain peer-reviewers
- b) Invest in technology supporting peer review
- c) Support the journal with PR recognition and services

## VALUE

- a) Credible and structured process
- b) Technology & tools such as plagiarism software, ability to identify PRs, rubrics, AI.
- c) CME, CE, awards, training and other forms of recognition.

Original Submission  
[REDACTED] (Reviewer 1)

Recommendation:  Overall Manuscript Rating (1-100):

**Reviewer Instructions**

3 = exceptional, 2 = adequate, 1 = inadequate, IDK= I don't know, NA = not applicable to this study

**Review Questions**

**\*Introduction** [Insert Special Character](#)

The research question is set in the context of previous literature

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**\*The aim is clearly articulated**

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**\*Methods**

Inclusion and exclusion criteria are clearly articulated

<p>*The population of interest, independent variables, and dependent variables are clearly defined</p> <p>Please select a response ▾</p>	<p><b>*Results</b></p> <p>Characteristics of the study cohort/sample are reported</p> <p>Please select a response ▾</p>	<p>*Quality (e.g., convenience vs. truly random sampling) and representativeness of the sample(s)</p> <p>Please select a response ▾</p>
<p>*Potential covariates are determined from literature and controlled for</p> <p>Please select a response ▾</p>	<p>*Tables and figures stand alone (appropriate titles, legends, and footnotes) and are referenced in the text</p> <p>Please select a response ▾</p>	<p>*Appropriate statistical methods (qualitative, quantitative, or both) are employed</p> <p>Please select a response ▾</p>
<p>*The measures are clearly described</p> <p>Please select a response ▾</p>	<p>*Point estimates, test statistics, and P values or confidence intervals are reported where appropriate</p> <p>Please select a response ▾</p>	<p>*Multivariable analyses where appropriate (control for potential confounding)</p> <p>Please select a response ▾</p>
<p>*Reliability and validity of instrument(s) addressed (if appropriate)</p> <p>Please select a response ▾</p>	<p><b>*Discussion</b></p> <p>Results are positioned within a review of the relevant current literature</p> <p>Please select a response ▾</p>	<p>*Sample size/power addressed</p> <p>Please select a response ▾</p>
<p><b>*References</b></p> <p>References include relevant, current articles on the topic</p> <p>Please select a response ▾</p>	<p>*The importance of the findings and possible explanations of study results are addressed</p> <p>Please select a response ▾</p>	<p>*Plan for missing data and addressed appropriately</p> <p>Please select a response ▾</p>
<p>*Do you wish to earn Continuing Education credits for this review? Your review will be evaluated and must be approved by the editor. If approved, your CME certificate will be e-mailed to you.</p> <p><input checked="" type="radio"/> Please select a response</p> <p><input type="radio"/> Yes – AMA PRA Category 1 Credit™ for physicians</p> <p><input type="radio"/> No</p>		<p>*Selection bias/volunteer bias/survey non-response addressed appropriately in the study design and/or analysis</p> <p>Please select a response ▾</p>
<p>*How long did it take for you to complete this review?</p> <p><input checked="" type="radio"/> Please select a response</p> <p><input type="radio"/> 30 minutes up to 1 hour</p> <p><input type="radio"/> 1 hour up to 1½ hours</p> <p><input type="radio"/> 1½ hours up to 2 hours</p> <p><input type="radio"/> 2 hours up to 2½ hours</p> <p><input type="radio"/> 2½ hours up to 3 hours</p> <p><input type="radio"/> 3 hours up to 3½ hours</p> <p><input type="radio"/> 3½ hours up to 4 hours</p>		

Peer Reviewer rubric samples

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# WHAT DEFINES A “GREAT PEER REVIEW”?

- “There are almost as many types of good reviewers as there are good reviews”
  - Reviewers learn by trial and error
  - Most reviewers like to receive feedback
- “It may be time for journals to start training their reviewers— though this assumes peer review is worthwhile and people can be trained.”
- Reviewers might also be advised to spend no longer than 4 hours on their task”
  - Reviewers spend SIGNIFICANT amount of time on reviews
- Potentially better reviews:
  - Working in a university-operated hospital
  - Relative youth (<10 years of experience after training)

Black N. What Makes a Good reviewer and a Good Review for a General Medical Journal? *JAMA* 1998;280(3):231-233

Rosenfeld RM. How to review journal manuscripts. *Otolaryngology Head and Neck Surgery*. 2010;142:472-486

Callahan ML. The relationship of previous training and experience of journal peer reviewers to subsequent review quality. *Plos Med*. 2007;4(1):e40.



WHAT DEFINES A  
“GREAT PEER  
REVIEW”?

# DISCUSSION



# I APPRECIATE...

Don't get into the weeds of editing

Don't request the authors do a new study

Specific comments with a clear direction

Requests for citations for methods that may not be familiar to the reviewer

Acknowledgement that the reviewer does not have the requisite expertise to advise on statistics but thinks something is amiss

Permission to be more expansive or directive in the discussion

Permission to cut certain details or redundancies

Requests to make recommendations that over-reach the data from a single study

Call out excessive speculation

Write a letter to the editor if you want to make an activist statement based on the findings, but don't ask the author to do it for you

Disciplinary differences: sociologists and epidemiologists may not use the same language for the same concepts

Suggest future research directions

# AGENDA

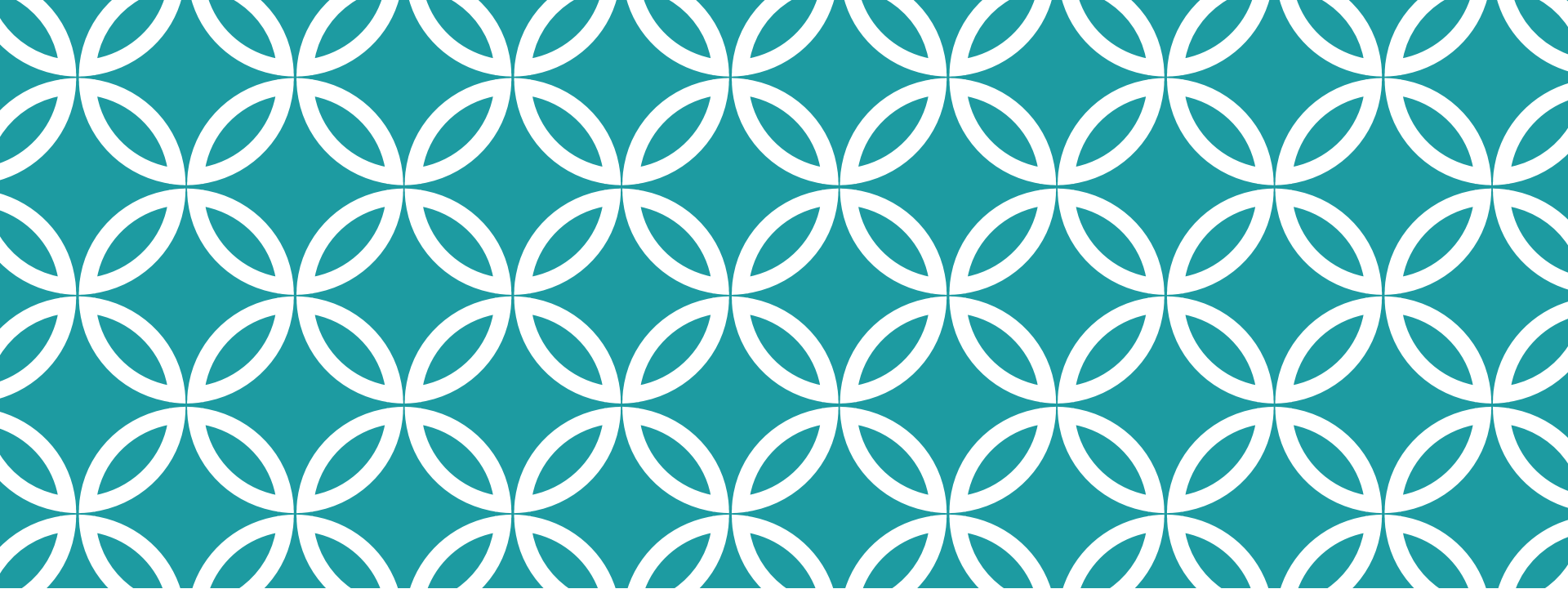
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# FINDING, TRAINING, AND RETAINING GOOD PEER REVIEWS

- Finding
  - Editorial board and current authors
  - Services such as Publons or the WoS Reviewer Locator
    - <https://clarivate.com/webofsciencegroup/solutions/reviewerlocator/>
    - [Publons](#)
- Training
  - <https://wkauthorservices.editage.com/peer-reviewer-training-course/>
  - [Publons Peer Reviewer Academy](#)
  - Editorial training sessions
- Retaining
  - Recognition and Rewards for Peer Reviewers
    - CE and CME
    - Academic support with reviewer certification (through Publons)

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  - Including the Publons slides from 2020, and other Peer Reviewer resources.



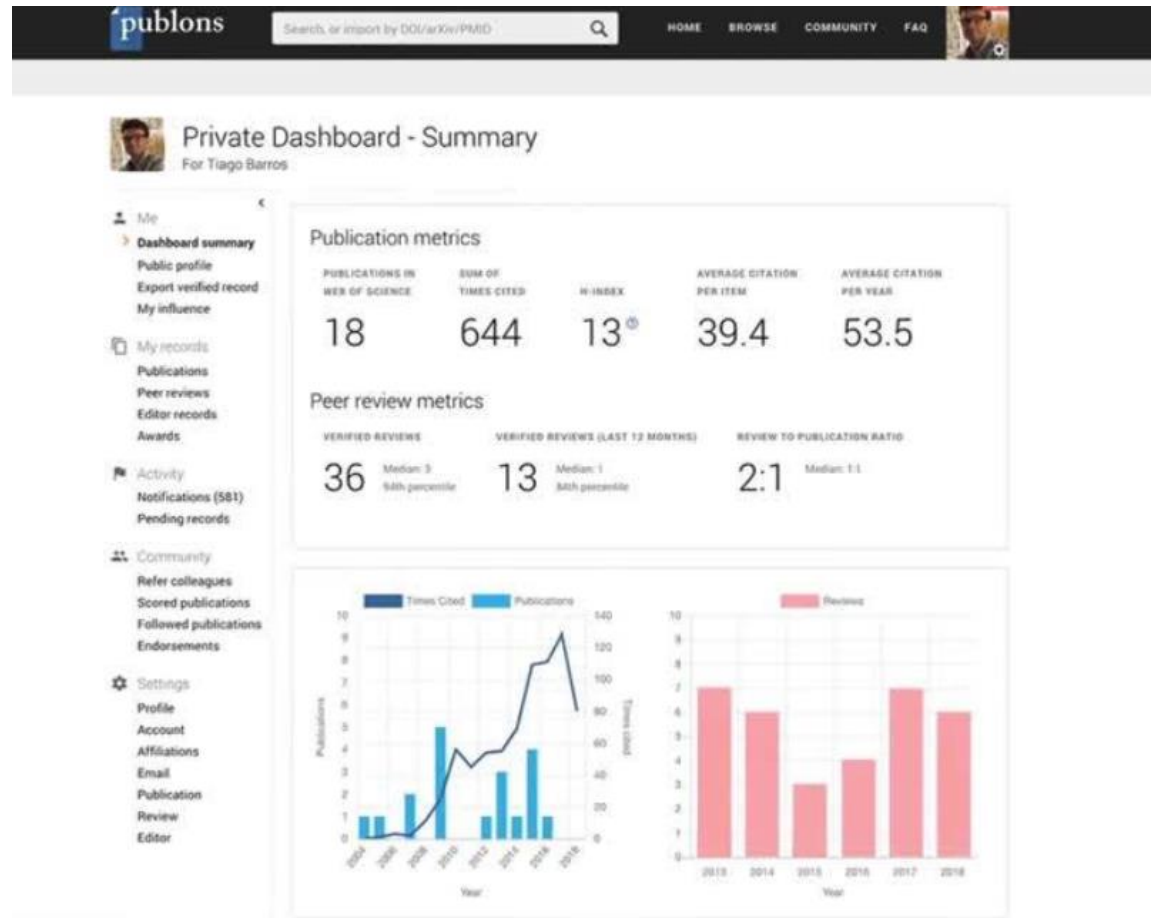
# PUBLONS

Editors and Peer Reviewer

# ABOUT PUBLONS

- Publons is owned by Clarivate Analytics, also the owner of the Web of Science (WoS) and Journal Impact Factor
- Target audience is Reviewers of journals, grants, books and other scholarly publications.
- Reviewers register for a Publons account and create a link to their articles and citation data in the WoS.
- Benefit to reviewers is that it provides a verified database of reviewer activity for their CV or scholarly aspirations.

# PUBLONS





# JOURNAL INTEGRATION

- Publishers can offer Publons integration at different levels
  - Peer Reviewer integration and support
  - Publons Reviewer Connect
- Integrates with all editorial submission platforms
  - Scholar One, EditorialManager<sup>®</sup>, OJS, etc.
- Editor Dashboard

# PUBLONS RESOURCES

[Case Study](#)

[Publons Peer Reviewer Academy](#)

[Publons](#)

## BASIC

Basic course

Completely **FREE**

Three-hour interactive e-learning course (6 modules), including videos and quizzes

Discussion forum for Q&A

Downloadable peer review report template

**Enroll now**

# REVIEWER TRAINING PROGRAM

[www.wkauthorservices.editage.com/peer-reviewer-training-course](http://www.wkauthorservices.editage.com/peer-reviewer-training-course)



 Wolters Kluwer

## ADVANCED

course

at a special discount

~~USD 200~~ **USD 100**

RECOMMENDED

Three-hour interactive e-learning course (6 modules), including videos and quizzes

Discussion forum for Q&A

Downloadable peer review report template

Downloadable tools and checklists for different stages of reviewing

Methodology and statistics reviewing guide by expert peer reviewers

Advanced tips to boost your stature

Practice review assignment with assessment and feedback from course faculty

Certificate of completion

Post-completion webinar

**Buy now**

# RESOURCES — PEER REVIEWERS

- COPE
  - <https://publicationethics.org/resources/guidelines-new/cope-ethical-guidelines-peer-reviewers>
  - <https://publicationethics.org/resources/seminars-and-webinars/artificial-intelligence>



*Thank You!*