

How to Write a Paper for Publication with IEEE

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Editor-in-Chief, IEEE J-STARS

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**JOURNAL OF SELECTED TOPICS IN APPLIED EARTH
OBSERVATIONS AND REMOTE SENSING
(JSTARS)**
(ISSN 1939-1404)

JSTARS IS NOW OPEN ACCESS!

J-STARS is a fully
open-access journal.

Author publication
cost (APC) is \$1250
for each accepted
manuscript, which is
in part supported by
the IEEE GRSS.

WHAT ARE THE FEATURES?

REVIEW PROCESS

- Each manuscript is allowed to revise once (either major or minor).
- No decision of "reject & resubmit".
- A rejected paper is allowed to resubmit twice (after extensive revision).
- A manuscript with major revision decision has 4 weeks to complete revision, and a manuscript with minor revision decision has 2 weeks to complete.
- Reviewers are given 3 weeks to complete review for a paper after major revision, and 2 weeks for a paper after minor revision.

SPECIAL ISSUES (SIs)

- No limitation on the number of SIs to be published per year.
- An SI paper is published immediately after acceptance without waiting for other SI papers. After all the accepted SI papers are published, Guest Editors (GEs) will publish an editorial for the SI.
- Each SI may have up to 3 free papers per GE's discretion.
- A template for SI proposal can be found at:
<http://www.grss-ieee.org/jstars-special-issues/>

For any question, please contact
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Guest Editors: Hanwen Yu, Vito Pascazio, Alejandro C. Frery, Feng Xu,
Submission window: **January 1, 2021 – June 30, 2021**

[\[Call for papers\]](#)

- Special Issue on "Time series remote sensing for land surface dynam
Guest Editors: Xiaolin Zhu, Chunyuan Diao, Desheng Liu, Eileen H. Hel
Submission window: **January 1, 2021 – May 31, 2021**

[\[Call for papers\]](#)

- Special Issue on "Multi-resolution and Multi-platform Remote Sensing
Guest Editors: Yang Xu, Gemine Vivone, Danfeng Hong, Wenzhi Liao
Submission window: **January 1, 2021 – July 30, 2021**

[\[Call for papers\]](#)

- Special Issue on "Recent Advances in land cover and land use classifi
Guest Editors: Qian Shi, Andrea Marinoni, Bo Du, Chang Xu, Lizhe War
Submission window: **January 1, 2021 – September 30, 2021**

[\[Call for papers\]](#)

- Special Issue on "Advances in change detection and analysis using m
Guest Editors: Meisam Amani, Mahdi Hasanlou, Ali Mohammadzadeh,
Kusetogullari

Submission window: **January 1, 2021 – September 30, 2021**



Outline

- Authoring for IEEE
 - Writing your paper
 - Publication ethics
 - Editorial Process
- Summary
- Questions Welcome during Presentation

Why does one publish?

- Share discoveries and knowledge
- Gain prestige and recognition
- Required for program/degree
- Assessment and promotion in many careers based on publications
- Secondary benefits
 - Writing promotes better understanding
 - Logical organization requires clarity of thought
 - Often spurs new ideas
 - Both by authors and others

Guide for writing a technical paper

1. **Why and Where to Publish**
2. **Choose an Audience and pick a journal**
3. **Paper Structure**
4. **Conform to Ethics**
5. **Write the paper and have it proofed**
6. **Submit and interact with the editors**



Publish

Publish IEEE journal?

- The majority of journal articles feature the authors' original research
- **Journal article:** fully developed presentation, "final" findings
 - Significant novelty, thorough, and complete exploration
 - Clear conclusions supported by adequate data, experiments, or proofs
 - Can be either a letter or a full paper depending on publication speed.
- A **conference article** is often a report on ongoing research
 - Can present preliminary results or highlight recent work
 - Establish precedence for your ideas
 - Gain informal feedback to use in your research
- Conference articles are typically shorter than journal articles, with less detail and fewer references
 - Often journal papers build upon conference papers

Publish IEEE journal or IEEE conference?

IEEE Journals



- IEEE journals are cited 3 times more often in patent applications than other leading publisher's journals



- A high percentage of articles submitted to any professional publication are rejected

IEEE Conferences

- IEEE Conference proceedings are recognized worldwide as the most vital collection of consolidated published articles in EE, computer science, related fields
- Per IEEE Guidelines, if you do not present your article at a conference, it may be suppressed in IEEE *Xplore* and not indexed in other databases

Publish

Finding the right IEEE publication or IEEE conference

IEEE has > **151 unique publications** covering a wide range of technical areas

- Review the journal listings
 - Who reads it
 - What they publish
 - What kinds of articles they want
 - Who is on the editorial board
 - What is their editorial record
 - What is the impact factor

IEEE publishes ~ **1,000+** leading-edge **conference proceedings** every year

- Review the conference calendar
 - Find a good match for your research subject matter
 - Ensure you are available to present
 - Who are the general and technical chairs

Audience

Audience

Scientific research publishing

- Who writes scientific papers?
 - Whoever solves a new and important problem in their field
 - Engineers, scientists, educators and researchers from:
 - Academia
 - Corporations
 - Government
 - Students and professors typically write and present conference papers before submitting journal articles



Audience

What IEEE editors and reviewers are looking for

- Original content that is appropriate, in scope and level, for their journal
- Clearly written original material that addresses a new and important problem
- Valid data and methods that can be validated
- Conclusions that make sense
- Clear illustrations, tables and graphs that support the text
- References that are current and relevant to the subject

Audience

Why IEEE editors and reviewers reject papers

- The content is not a good fit for the publication
- The material is plagiarized
- There are serious scientific flaws:
 - Inconclusive results or incorrect interpretation
 - Fraudulent research
- It is poorly written
- It does not address a new enough problem or advance the scientific field
- The work was previously published
- The quality is not good enough for the journal
- Reviewers have misunderstood the article

Preparing Your Manuscript

Paper Structure

Elements of a manuscript

Title

Abstract

Keywords

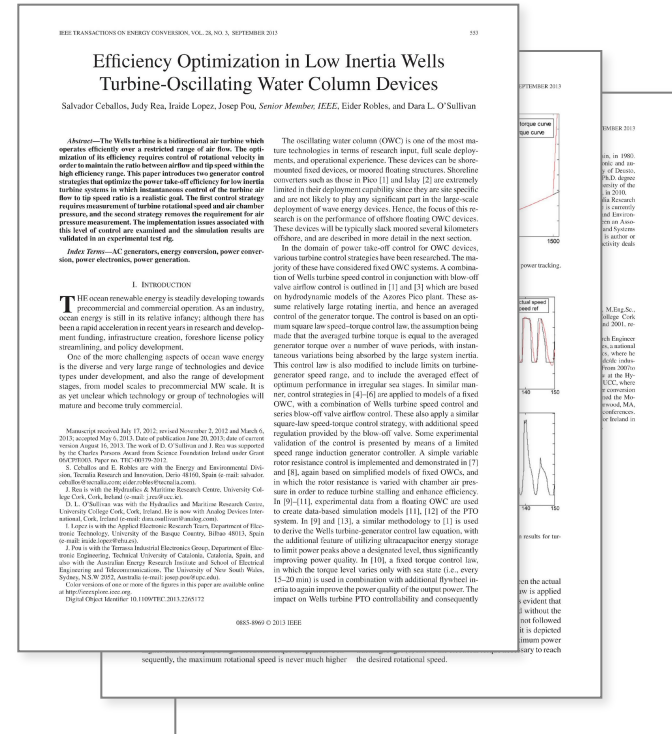
Introduction

Data and Methods

Results/Discussions/Findings

Conclusion

Acknowledgement/References



sequently, the maximum rotational speed is never much higher than the desired rotational speed.

Paper Structure

Title

An effective title should...

- Answer the reader's question: "*Is this article relevant to me?*"
- Grab the reader's attention
- Describe the content of a paper using the fewest possible words
 - Is crisp, concise
 - Uses keywords
 - Avoids jargon and acronymns

Bad Title: How we solved an important problem in a certain application

VS.

Good Title: Color barcodes for mobile applications: A per channel framework

Paper Structure

Abstract

- A “stand alone” condensed version of the article
 - Covers: significance, novelty, methodology, findings, and conclusions
 - Uses keywords and index terms
- It is a tall order to do all of these in a typical 150-250 word abstract!
- Quite important:
 - For most readers, this will determine if they read the rest of your article
 - Several decisions in the peer review process depend on title and abstract
 - Can be written first and then rewritten when the paper is done
- Guideline: In the early phase of writing, the author should plan to spend half as much time on writing, reviewing, and editing abstract as on the rest of the manuscript

Paper Structure

Abstract: Example

What you did

We propose a color barcode framework for mobile phone applications by exploiting the spectral diversity afforded by the cyan (C), magenta (M), and yellow (Y) print colorant channels commonly used for color printing and the complementary red (R), green (G), and blue (B) channels, respectively, used for capturing color images. Specifically, we exploit this spectral diversity to realize a three-fold increase in the data rate by encoding independent data in the C, M, and Y print colorant channels and decoding the data from the complementary R, G, and B channels captured via a mobile phone camera. To mitigate the effect of cross-channel interference among the print colorant and capture color channels, we develop an algorithm for interference cancellation based on a physically motivated mathematical model for the print and capture processes. To estimate the model parameters required for cross-channel interference cancellation, we propose two alternative methodologies: a pilot block approach that uses suitable selections of colors for the synchronization blocks and an expectation maximization approach that estimates the parameters from regions encoding the data itself. We evaluate the performance of the proposed framework using specific implementations of the framework for two of the most commonly used barcodes in mobile applications, QR and Aztec codes. Experimental results show that the proposed framework successfully overcomes the impact of the color interference, providing a low bit error rate and a high decoding rate for each of the colorant channels when used with a corresponding error correction scheme.

How the results move the field forward

How you did it

Main results and where they apply

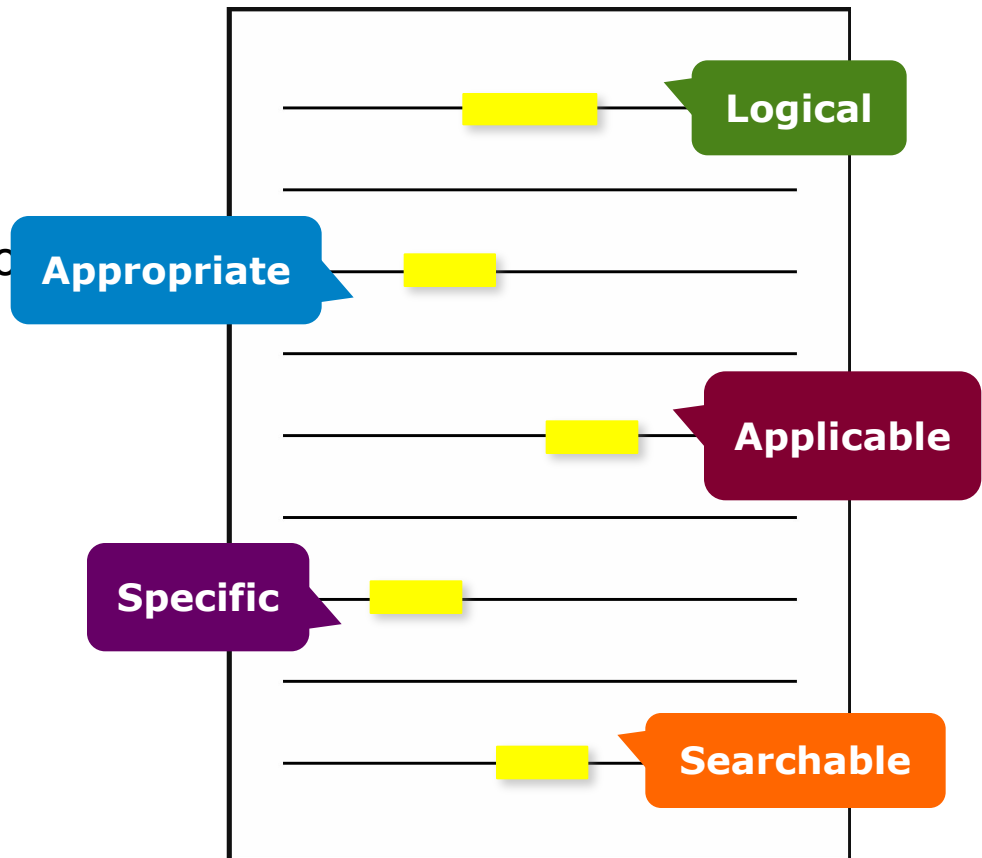
Paper Structure

Keywords

Use in the Title and Abstract for enhanced Search Engine Optimization; many journals ask for keywords

Example:

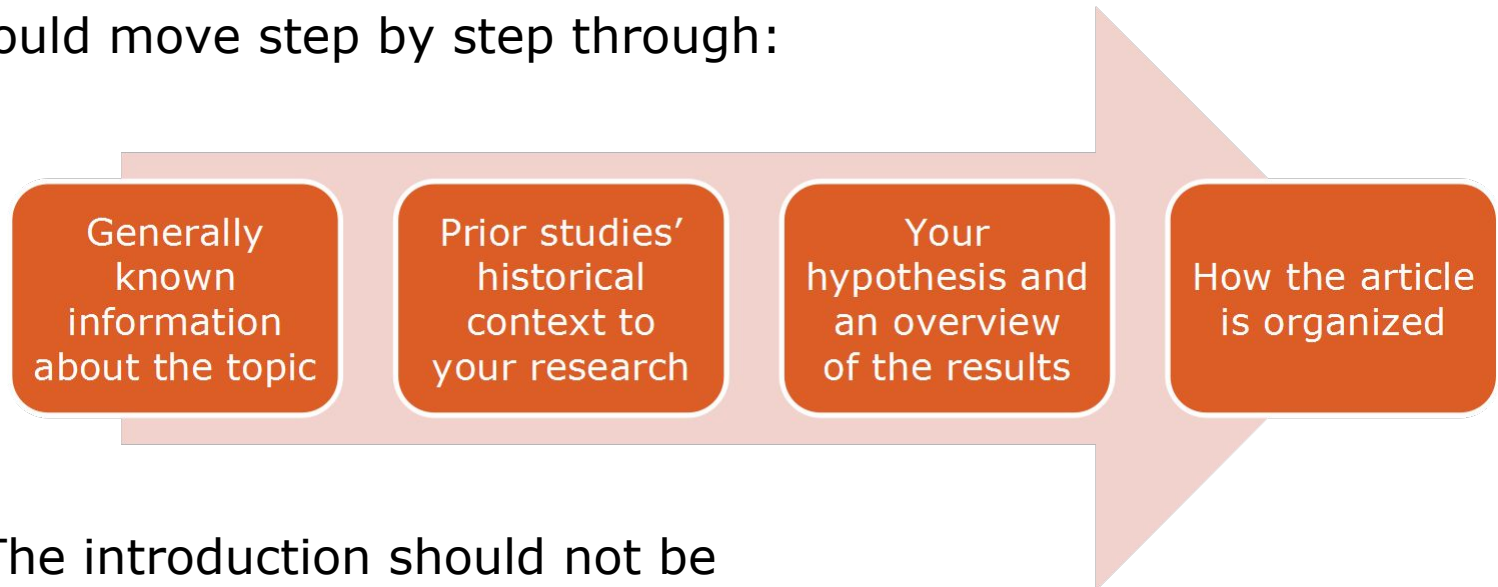
2-D barcodes, Aztec codes, color barcodes, interference cancellation, quick response (QR) codes



Paper Structure

Introduction

- A description of the problem you researched including a literature background that motivates the additional work.
- It should move step by step through:



- The introduction should not be
 - Too broad or vague
 - More than 2 pages
 - An aggregation of disconnected summaries of past works

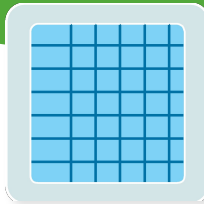
Paper Structure

Data and Methods

- Problem formulation and the data/processes used to solve the problem, prove or disprove the hypothesis
- Use illustrations to clarify ideas, support conclusions:

Tables

Present representative data or when exact values are important to show



Graphs

Show relationships between data points or trends in data



Figures

Quickly show ideas/conclusions that would require detailed explanations



Paper Structure

Results/discussion

Demonstrate that you solved the problem or made significant advances in understanding the process being investigated

Describe your experiments/analysis methods

- What was the set-up, what data sources were used and why, ...
- What metrics are used for analysis (Why, if not already well-known), how accurate were the results

Summarized Results:

- Should be clear and concise
- Use figures, graphs or tables with narrative to illustrate findings

Discussion: Interprets the Results

- Why your research offers a new result
- Acknowledge any limitations in accuracy or resolution
- Highlight potential connections with earlier work that may be improved after learning about your results

Paper Structure

Conclusion

- Succinctly explain what the research has achieved and what is new about it
 - As it relates to the problem stated in the Introduction
 - Include a summary of the main findings, important conclusions and implications for the field
- Provide benefits and shortcomings of:
 - The solution presented
 - Your research and methodology
- Suggest future areas for research
- Not a repeat of the abstract!



Paper Structure

Conclusion: Example

The framework proposed in this paper provides an effective method for extending monochrome barcodes to color. Our color code constructions offer three times the data rates of their monochrome counterparts, exploiting the spectral diversity provided by color printing and capture systems in conjunction with model-based interference cancellation that mitigates inter-channel coupling introduced by the physical characteristics of the devices. Although, bit error rates and therefore information capacities vary across the three resulting channels, the error rates are in ranges that are readily handled by the error correction coding options available for monochrome barcodes.

Paper Structure

References

- List only those references quoted in the paper
- There is no limit to the number of references
 - But use only those that directly support our work
- Ensure proper author attribution
 - Author name, *article title*, publication name, publisher, year published, volume, chapter and page number, or DOI
- Follow formatting conventions for publication
 - IEEE journals generally follow a citation numbering system

[4] H. Kato and K. T. Tan, "Pervasive 2D barcodes for camera phone applications," *IEEE Pervasive Comput.*, vol. 6, no. 4, pp. 76–85, Oct.–Dec. 2007.

[10] O. Bulan and G. Sharma, "High capacity color barcodes: Per channel data encoding via orientation modulation in elliptical dot arrays," *IEEE Trans. Image Process.*, vol. 20, no. 5, pp. 1337–1350, May 2011.

[21] K. Nurwono and R. Kosala, "Color quick response code for mobile content distribution," in *Proc. 7th Int. Conf. Adv. Mob. Comput. Multimedia*, Dec. 2009, pp. 267–271.

[32] C. M. Bishop, *Pattern Recognition and Machine Learning*. New York: Springer-Verlag, 2006.

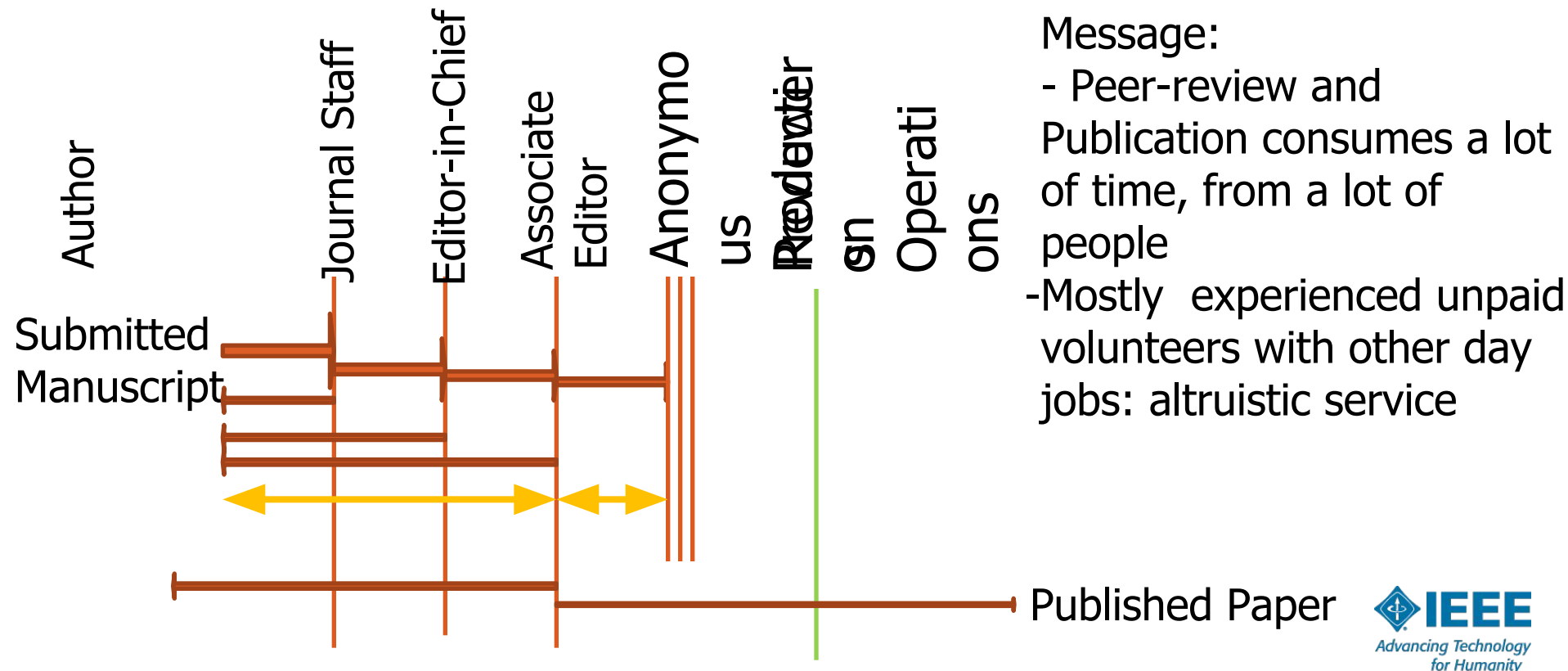
Summary: Preparing Your Manuscript

- You can and should start writing before you have all the work done and everything figured out
 - But should not submit until you have finished.
- Check for logical organization, clarity, and brevity
- Also check for
 - Conformance of style with the journal you are submitting to (citations, sections, formatting, etc)
 - Language and grammar
- Details matter: good work presented poorly is often misunderstood and rated poorly by reviewers
- The review process is not intended to edit the manuscript and poor presentation just offends the reviewers!

Publication Etiquette and Ethics

The Peer Review and Publication Process

- What happens after you click “submit” (my paper): typical journal workflow



Etiquette and Ethics in Publishing: Guiding Principles

- Value the time of others
 - Editorial board, reviewers, readers
 - Also your own!
- Maintain integrity of the publication process
 - Scientific integrity and reproducibility
 - Authorship
- Understand and avoid unacceptable conduct
 - Plagiarism, duplicate submission, non-disclosure

Ethics

Types of misconduct

Conflict of Interest

- A financial or other relationship with the publication at odds with the unbiased presentation of data or analysis

Plagiarism/Disclosure

- Copying another person's work word for word or paraphrasing without proper citation
- Must cite sources of all ideas, even informal

Fraud/Data Manipulation

- Fabrication of data, selective reporting of results
- Is eventually uncovered

Author involvement/ contributions

- Include any and all who have made a substantial intellectual contribution to the work
- Do not include non-contributors

Ethics

Ethical publishing

Maintain Scientific Integrity

- Your manuscript should reflect what you and you colleagues actually did and observed
 - Do not fabricate results or data
 - Results should be reproducible
 - Selectively reporting results is deceitful
- Fraud is eventually uncovered
- Several high profile cases: human cloning, cold fusion, ...



Refer to our Tips Sheet

http://www.ieee.org/publications_standards/publications/authors/plagiarism_and_multiple_submissions.pdf

Ethics

Ethical publishing

Conflicts of Interest

- Conflicts of interest should be minimized and clearly declared
 - Much more common for medical research
 - Can also occur with engineering and scientific research
- Corresponding author is responsible for checking with all others before submitting manuscript
 - Several journals have explicit statements that all authors must read and agree with
 - Send to everyone and request explicit acknowledgment



Refer to our Tips Sheet

http://www.ieee.org/publications_standards/publications/authors/plagiarism_and_multiple_submissions.pdf

Ethics

Ethical publishing

Plagiarism

- Avoid plagiarism
 - Cite and separate any verbatim copied material
 - Paraphrase reused text properly, and include citation
 - Credit any reused ideas
 - Familiarize yourself with IEEE Policies
 - Guideline: All material (ideas, text, figures, tables, ...) in your paper is assumed to be your own unless you acknowledge via citation. Quotes for demarcating material replicated verbatim from other authors.



Refer to our Tips Sheet

http://www.ieee.org/publications_standards/publications/authors/plagiarism_and_multiple_submissions.pdf

Ethics

Ethical publishing

Duplication, Redundancies & Multiple Submissions

- Author must submit original work that:
 - Has not appeared elsewhere for publication
 - Is not under review for another refereed publication
 - Cites previous work (including own past and concurrent work)
 - Indicates how it differs from the previously published work
 - Authors **MUST** also **inform the editor** when submitting any previously published work



Refer to our Tips Sheet

http://www.ieee.org/publications_standards/publications/authors/plagiarism_and_multiple_submissions.pdf

Ethical publishing

Reuse of published materials

- You must cite and acknowledge any published materials that you make re-use of
 - Examples: Diagrams/figures from an existing paper
 - Extracted and re-used => must get permission from author/publisher (copyright owner) and cite and acknowledge
 - Redrawn with modifications => should cite and indicated "adapted from" or "based on"
- This includes your own prior published work!



Refer to our Tips Sheet

http://www.ieee.org/publications_standards/publications/authors/plagiarism_and_multiple_submissions.pdf

Ethical publishing

Authorship/Acknowledgment

- Authorship for an article should be limited to individuals who have:
 - substantively contributed to the work, AND
 - reviewed the manuscript and agree with the contents and to being listed as an author
- **IMPORTANT:** All authors share responsibility for any ethics violations!
- People you have consulted with and who have offered advice, tools, etc but not directly participated can be acknowledged
 - Good idea to let folks know you are acknowledging them
- It is a terrible idea and ethically wrong to include a friend, colleague, or family member that has not contributed to the work as a “co-author”



Refer to our Tips Sheet

http://www.ieee.org/publications_standards/publications/authors/plagiarism_and_multiple_submissions.pdf

Ethical publishing

Dual Submissions

- It is not acceptable to submit substantially the same manuscript for review in multiple journals at the same time
 - Why?
 - Terribly wasteful of editorial board and reviewer resources
 - The practice is completely taboo in the world of scientific publishing
 - Copyright issues
- Faux counter-arguments
 - I thought it would be faster if I tried two places at the same time...
 - This journal was taking too much time therefore I submitted to another one to see if they would be quicker



Refer to our Tips Sheet

http://www.ieee.org/publications_standards/publications/authors/plagiarism_and_multiple_submissions.pdf

Ethical publishing

Disclosure & Double Publication

- As an author, it is your ethical responsibility to disclose all relevant prior work that you are aware of
 - What is relevant is a matter of judgment, however, relative relevance is easy to assess
 - In particular, you must disclose your closely related prior work of yours on the topic
 - Cannot reasonably claim ignorance of these!
- Publishing substantially the same work in two journal papers is unacceptable and often treated as an ethical violation
 - Also potential copyright violation depending on nature of publication
- Conference to journal overlap, practice varied by discipline
- Some variations between communities: disclosure is important here



Refer to our Tips Sheet

http://www.ieee.org/publications_standards/publications/authors/plagiarism_and_multiple_submissions.pdf

Ethical publishing

Publication Metrics

- Article and journal citation counts are just one metric of the impact and significance of the work
 - Wide variance of number of citations based on area
 - Bias toward sensationalism and marketing, rather than scientific merit
 - Some research results subsequently found to be fraudulent/erroneous are often cited frequently in follow on work
 - Computed metrics use time windows and useful half-life differs in different fields
 - Metrics are subject to gaming by unethical players



**Bibliometric Indicators:
Why do we need More
Than One, Gianluca Setti,
IEEE Access, May 2015**

<http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=6515033>

Ethical publishing

Bibliometric Manipulation

- "Bibliometric manipulation" is defined as actions designed to influence either journal bibliometric measures or personal citation counts
- IEEE now considers "bibliometric manipulation" as misconduct
- Cite your own papers when they are relevant, not to increase your own citation counts
- When you review papers, make sure you review the bibliography for the same reasons!
- Cite only papers relevant to your research and avoid citing papers just to increase an impact factor.



**Bibliometric Indicators:
Why do we need More
Than One, Gianluca Setti**

<http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=6515033>

Participate in Your Community

- Volunteer for reviews
 - Initial “supervised” mentorship phase with advisor
 - Subsequently as an independent reviewer
- Set up an “honor code” for your class/batch/workgroup
- Resist inappropriate peer pressure
 - Conformance should be a by-product of like-mindedness and not of weakness!
- Any ethical misconduct reflects poorly not only on you but also your co-authors and indirectly on your institution

Summary

- IEEE offers a wide variety of publication options
 - Journals and conferences
 - Open access vs conventional
- IEEE journals and conferences are among the most prestigious in the EE and CS fields
- As an author and scientist you carry your reputation as well as that of your co-authors and your institution
 - Pay due attention to Publication Ethics

Questions?

- IEEE Author Tools
 - http://www.ieee.org/publications_standards/publications/authors/index.html