

How to read and Summary Research Paper

Vinh Dinh Nguyen
PhD in Computer Science

Outline

- **Introduction to Scientific Research Paper**
- **What is Research Paper Structure**
- **How to find Research Paper**
- **How to read Research Paper**
- **How to summary Research Paper**
- **Assignment**

Outline

- **Introduction to Scientific Research Paper**
- **What is Research Paper Structure**
- **How to find Research Paper**
- **How to read Research Paper**
- **How to summary Research Paper**
- **Assignment**

Mentor Information



Vinh Dinh Nguyen 

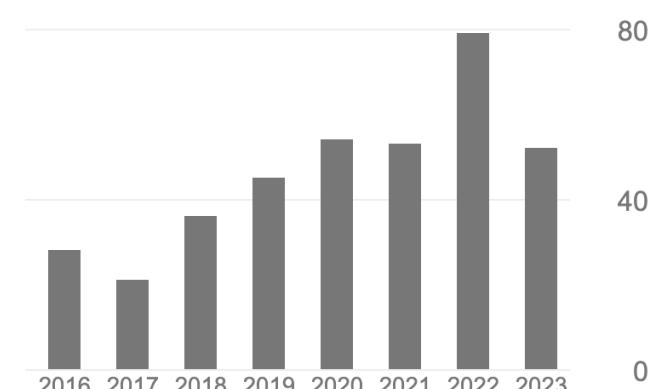
 FOLLOW

Deep learning computer vision DAS

	TITLE	CITED BY	YEAR
<input type="checkbox"/>	Learning framework for robust obstacle detection, recognition, and tracking VD Nguyen, H Van Nguyen, DT Tran, SJ Lee, JW Jeon IEEE Transactions on Intelligent Transportation Systems 18 (6), 1633-1646	84	2016
<input type="checkbox"/>	Support local pattern and its application to disparity improvement and texture classification VD Nguyen, DD Nguyen, TT Nguyen, VQ Dinh, JW Jeon IEEE Transactions on Circuits and Systems for Video Technology 24 (2), 263 - 276	56	2014
<input type="checkbox"/>	A Fast Evolutionary Algorithm for Real-time Vehicle Detection V Nguyen, T Nguyen, D Nguyen, S Lee, J Jeon IEEE Transactions on Vehicular Technology 62 (6), 2453 - 2468	46	2013

Cited by [VIEW ALL](#)

	All	Since 2018
Citations	436	323
h-index	11	9
i10-index	12	9



Co-authors [EDIT](#)

<https://scholar.google.com/citations?user=-gl2hEsAAAAJ>

Overview

Why do we need to write and publish a research paper

Publication Process

How to perform research

1

3

4

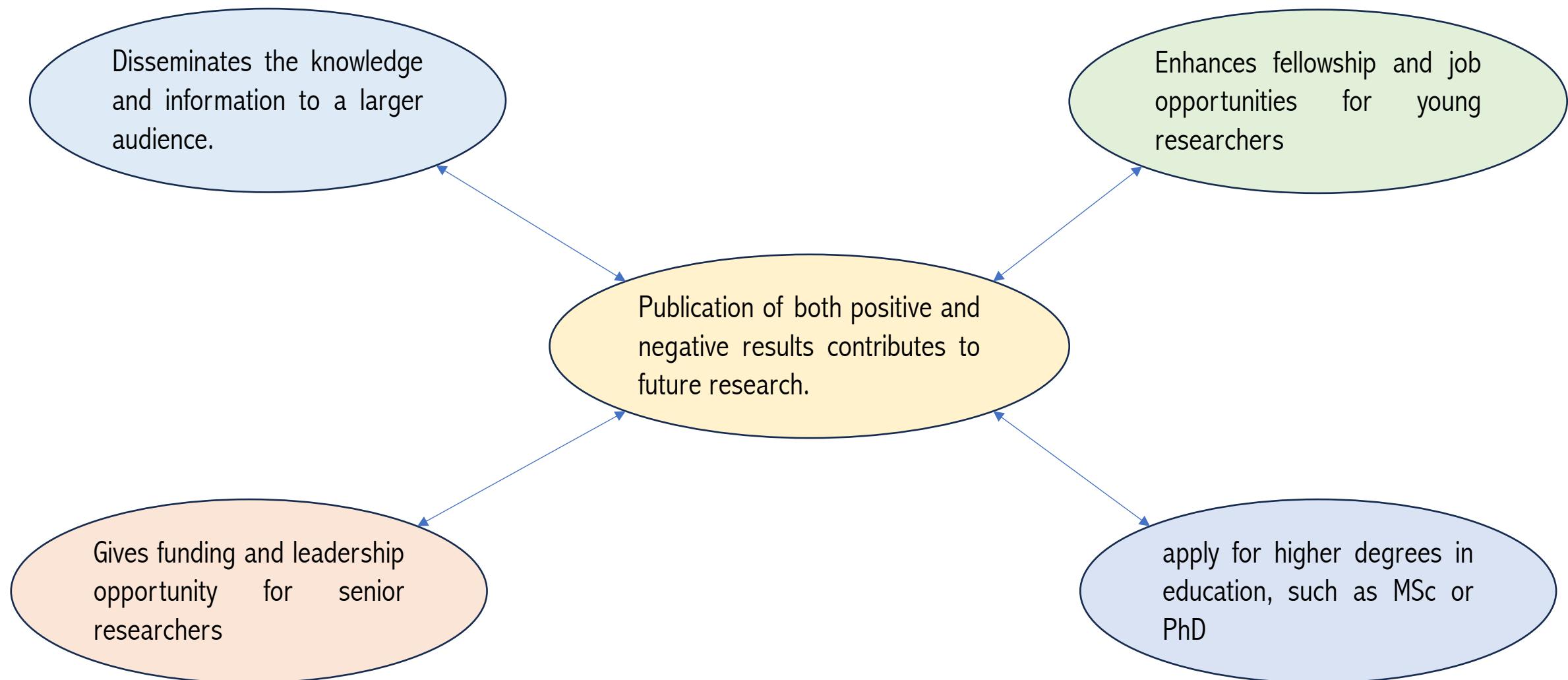
2

5

How to select a good research direction

ISSN, ISBN, ISI, SCI, SCIE, Scopus

Write a scientific research paper: Why?



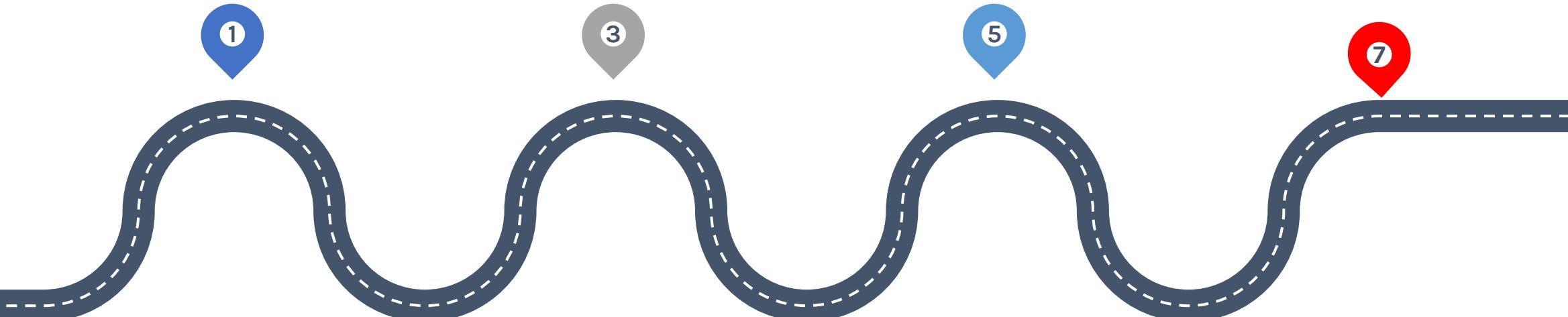
History of Scientific Writing

3500 BCE
The earliest scientific documentation and communication

Fifteen century
The invention of printing press
Help to spread out new scientific findings

Eighteenth century
Large number of journals
Specialty-specific journals

The twentieth century
Introduction, methods, results, discussion and conclusions



In the Middle Age
systematic collection and documentation of scientific data (the invention of paper)

Seventeenth century
The first scientific journal in French

Nineteenth century
Peer review process
Citation was added.

Need for Scientific Research Paper

To Develop a Scientific Writing Skill

Improves Job Opportunity

To Connect with Senior Colleagues

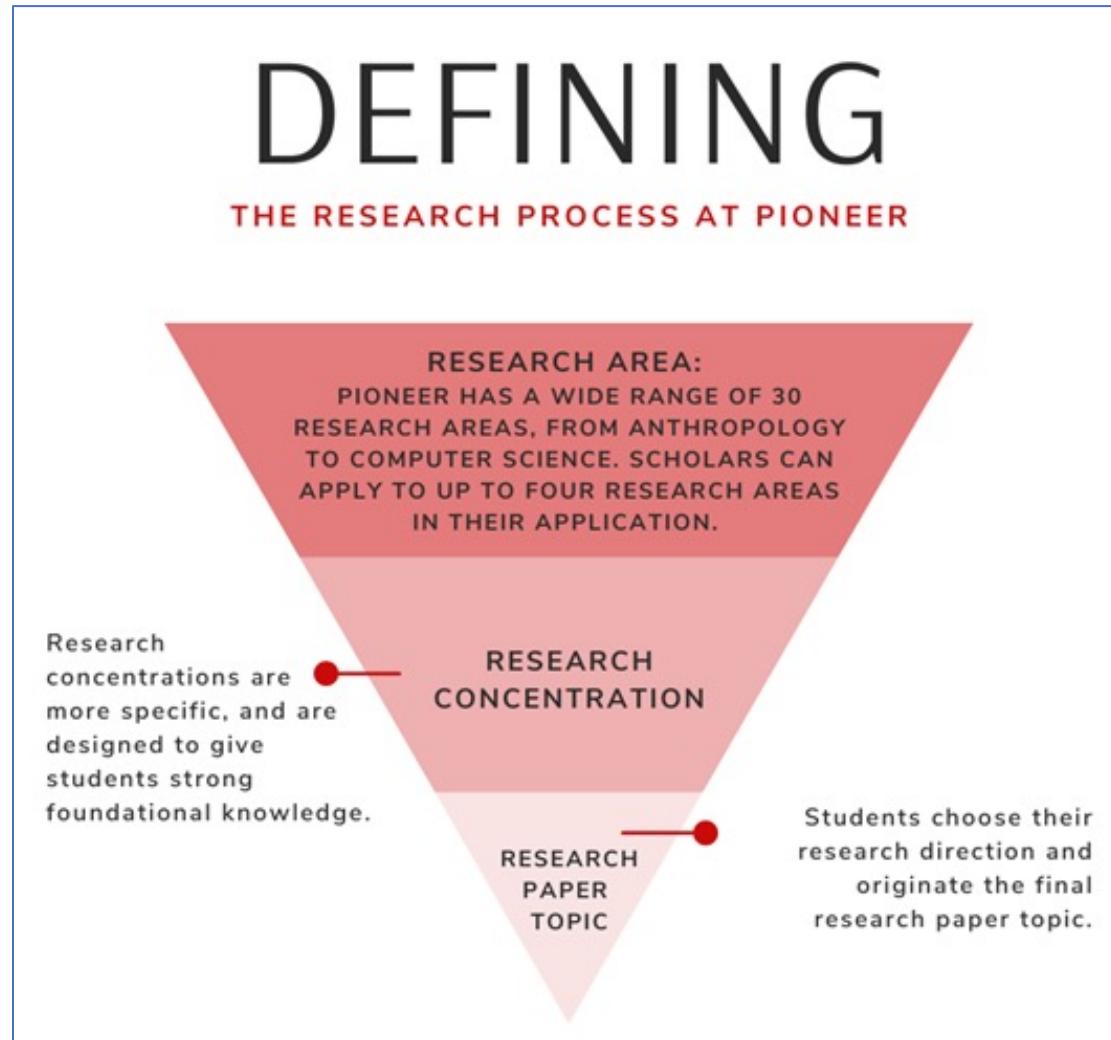
Benefits for Senior Researchers

To Enhance Academic Career

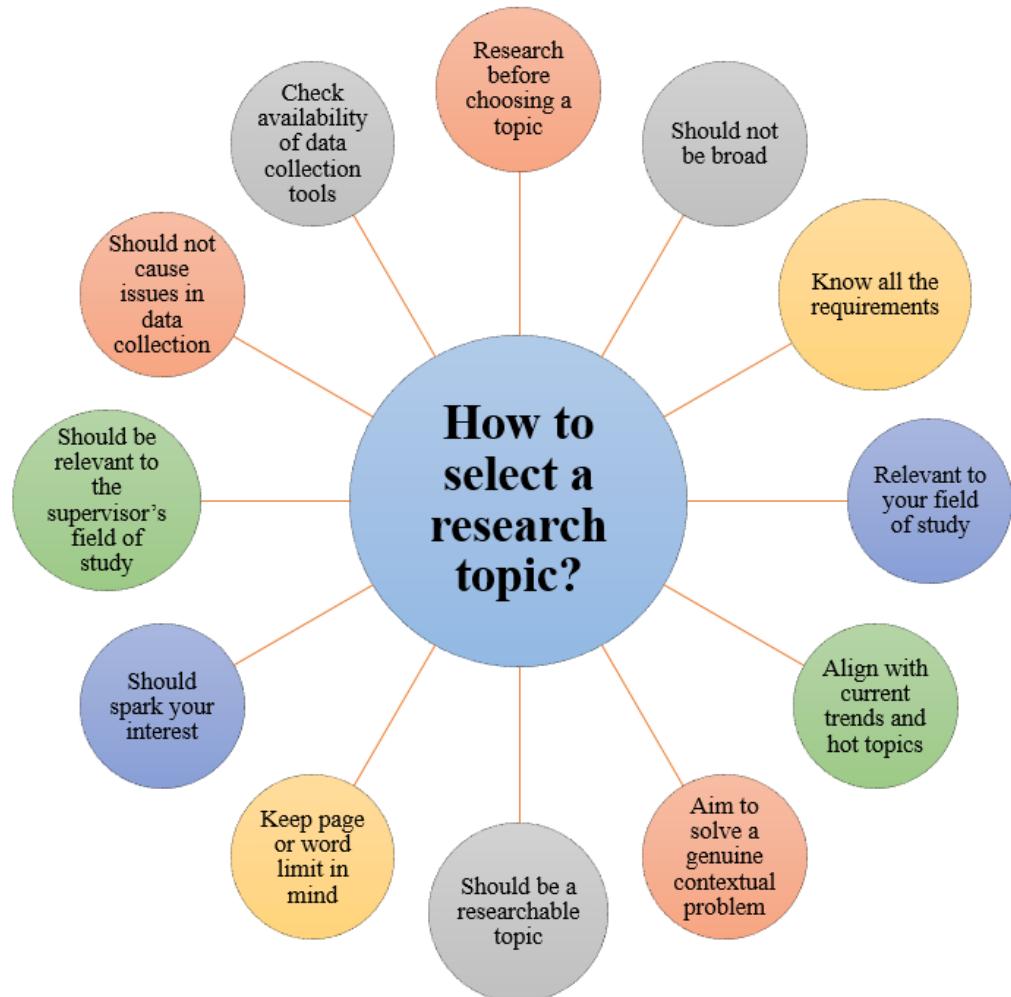
Guides Future Research

Provide Reliable Scientific Information

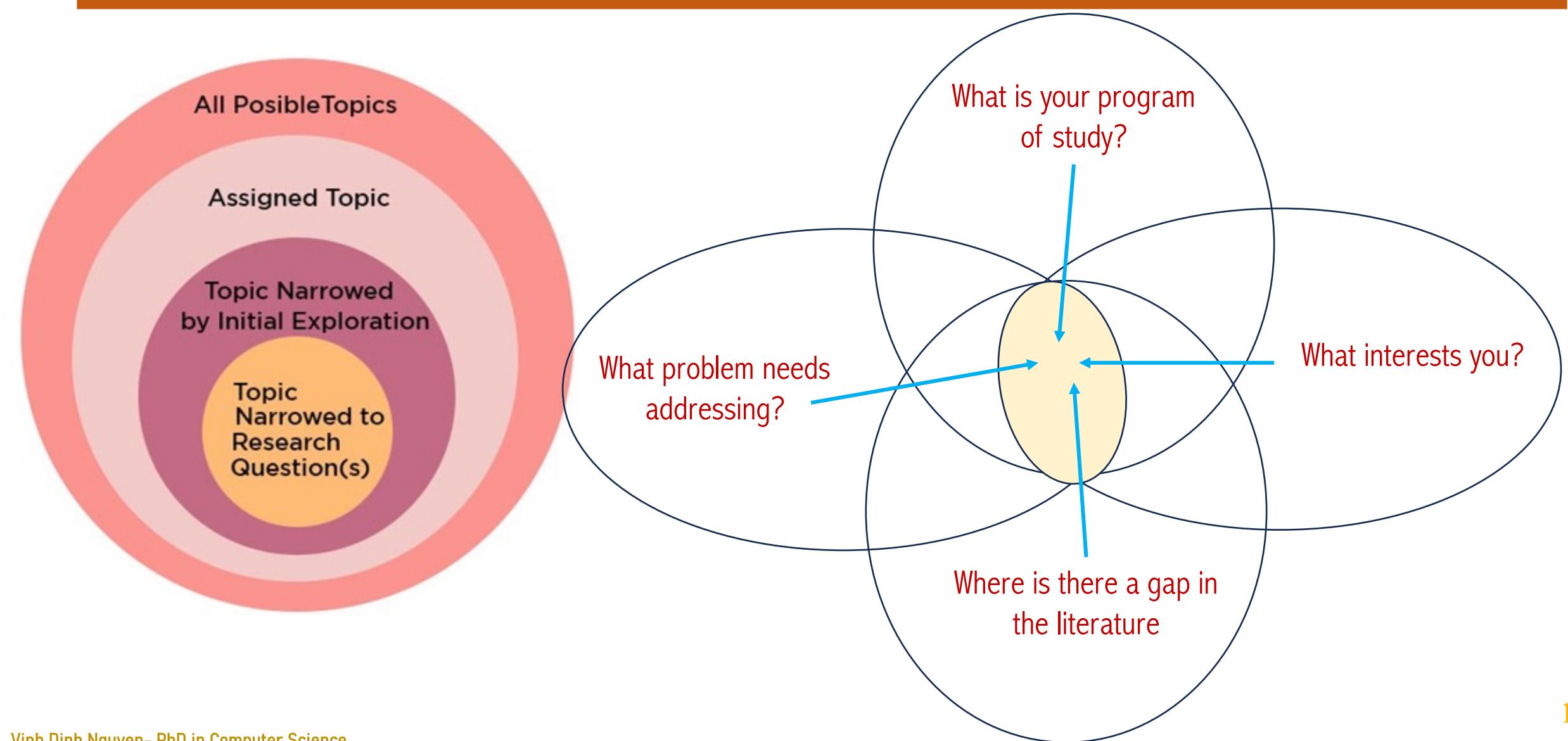
Research Direction



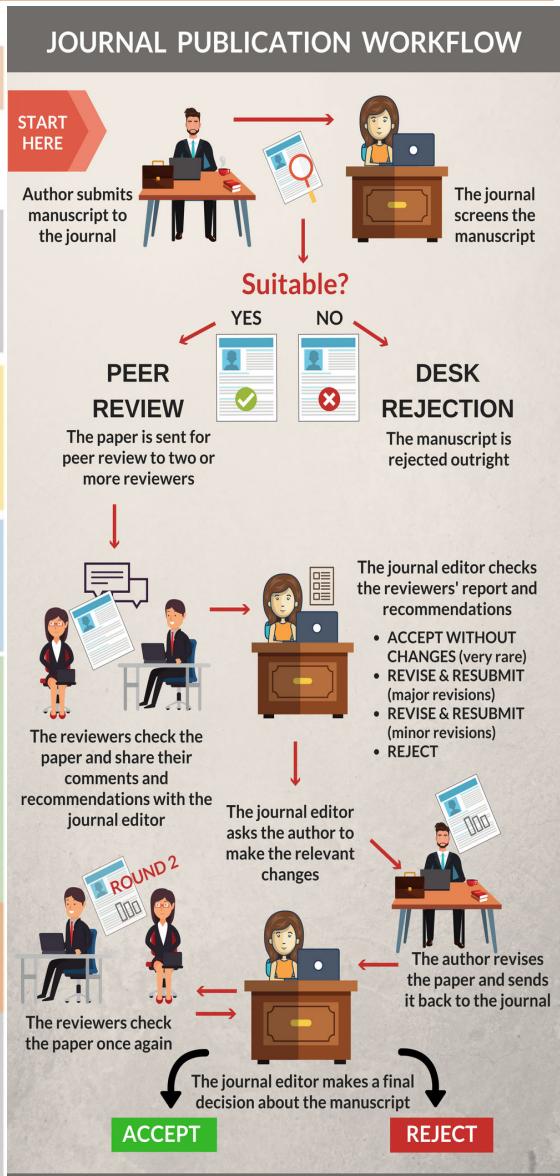
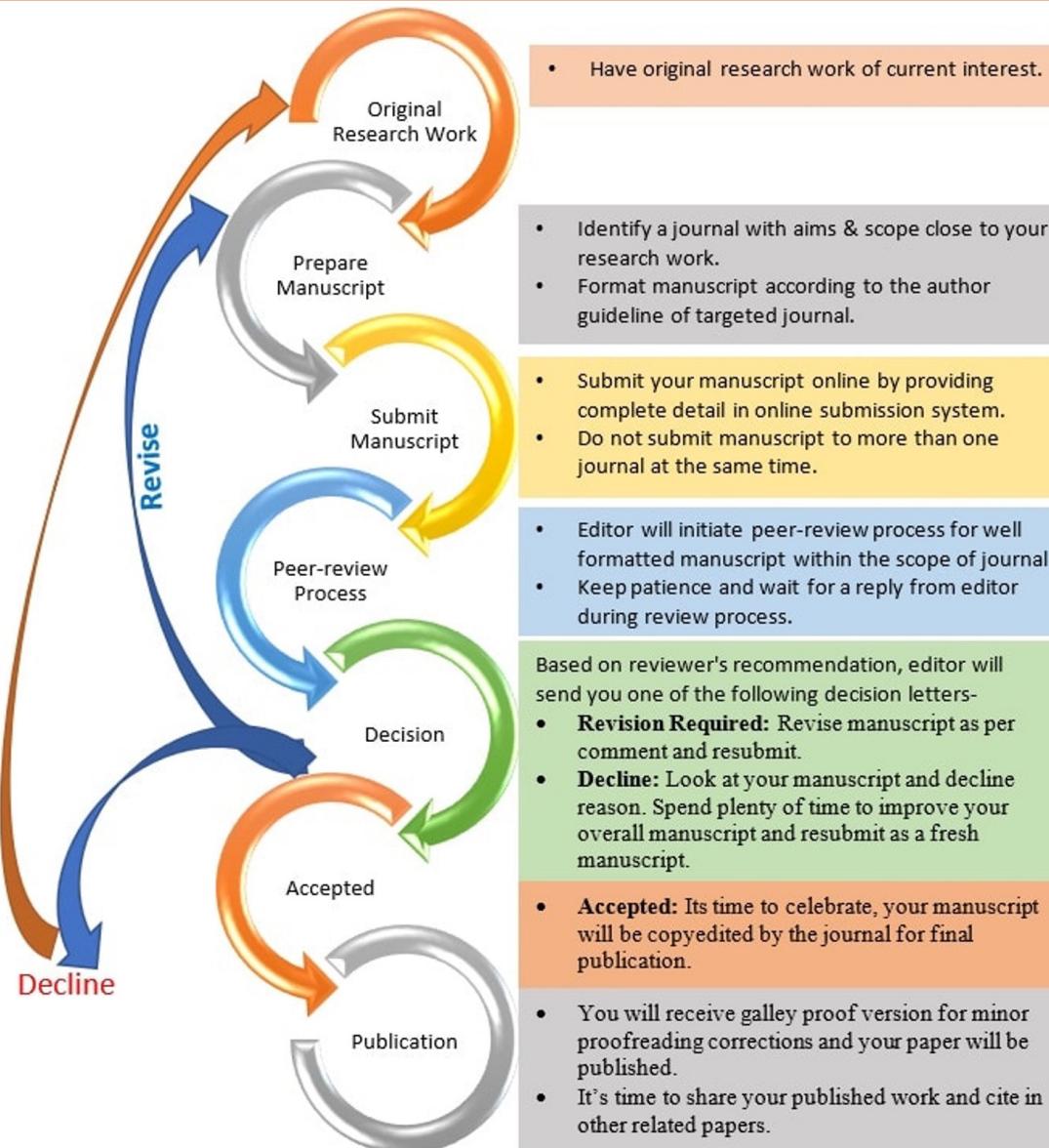
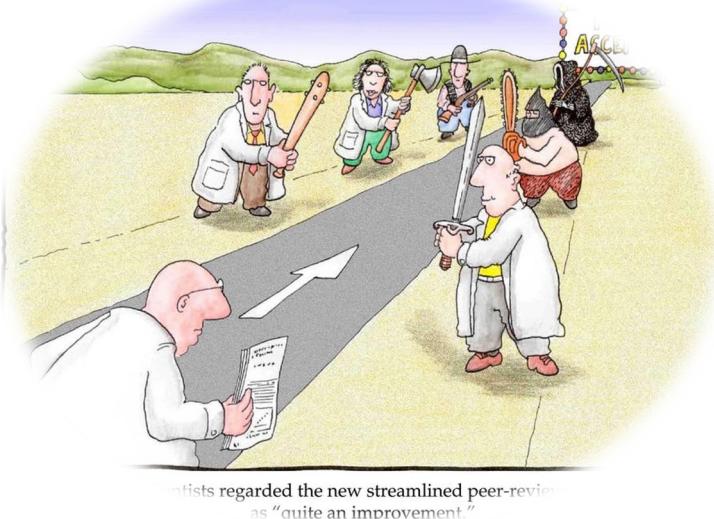
Research Direction



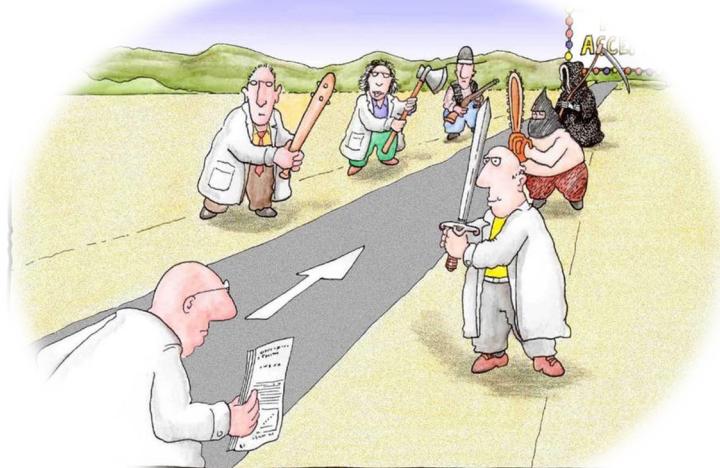
Research Direction



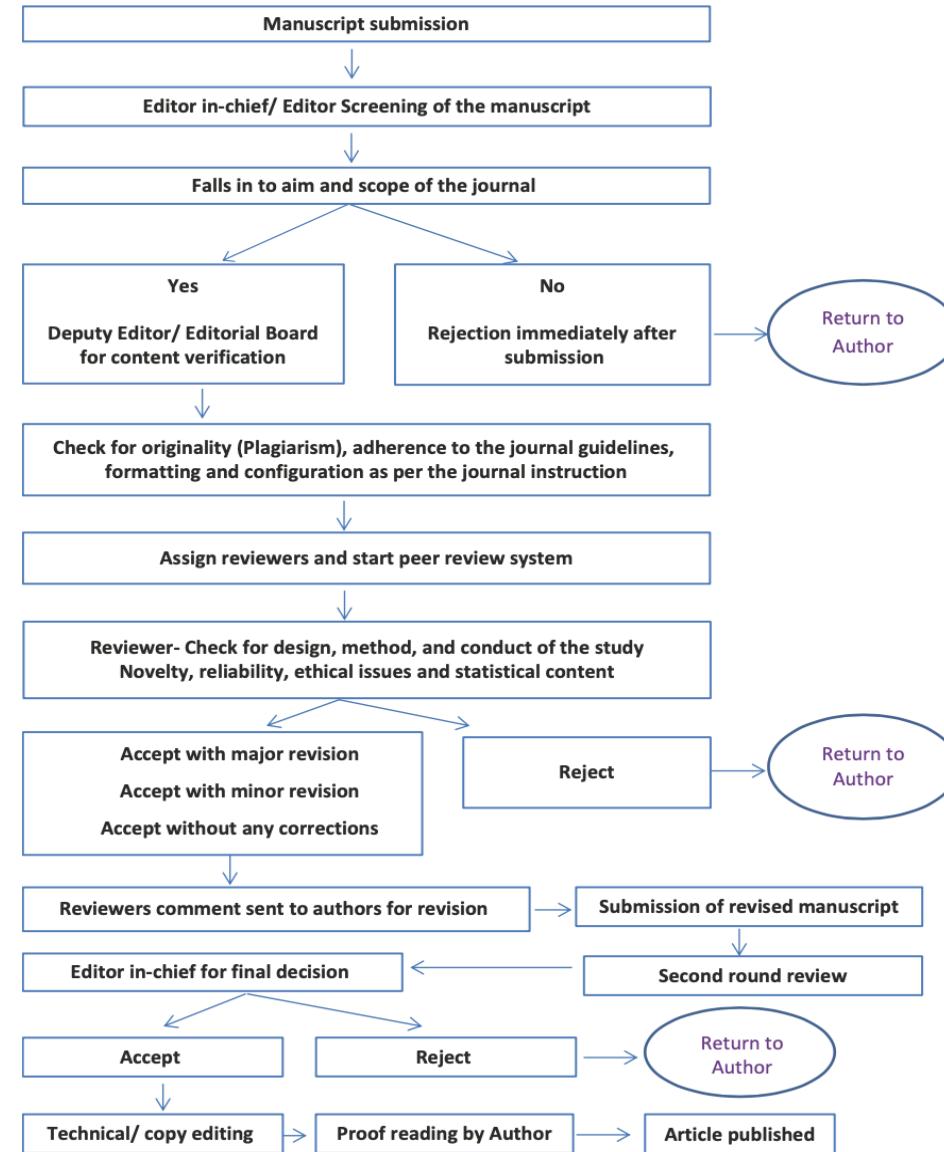
Paper Publishing Process



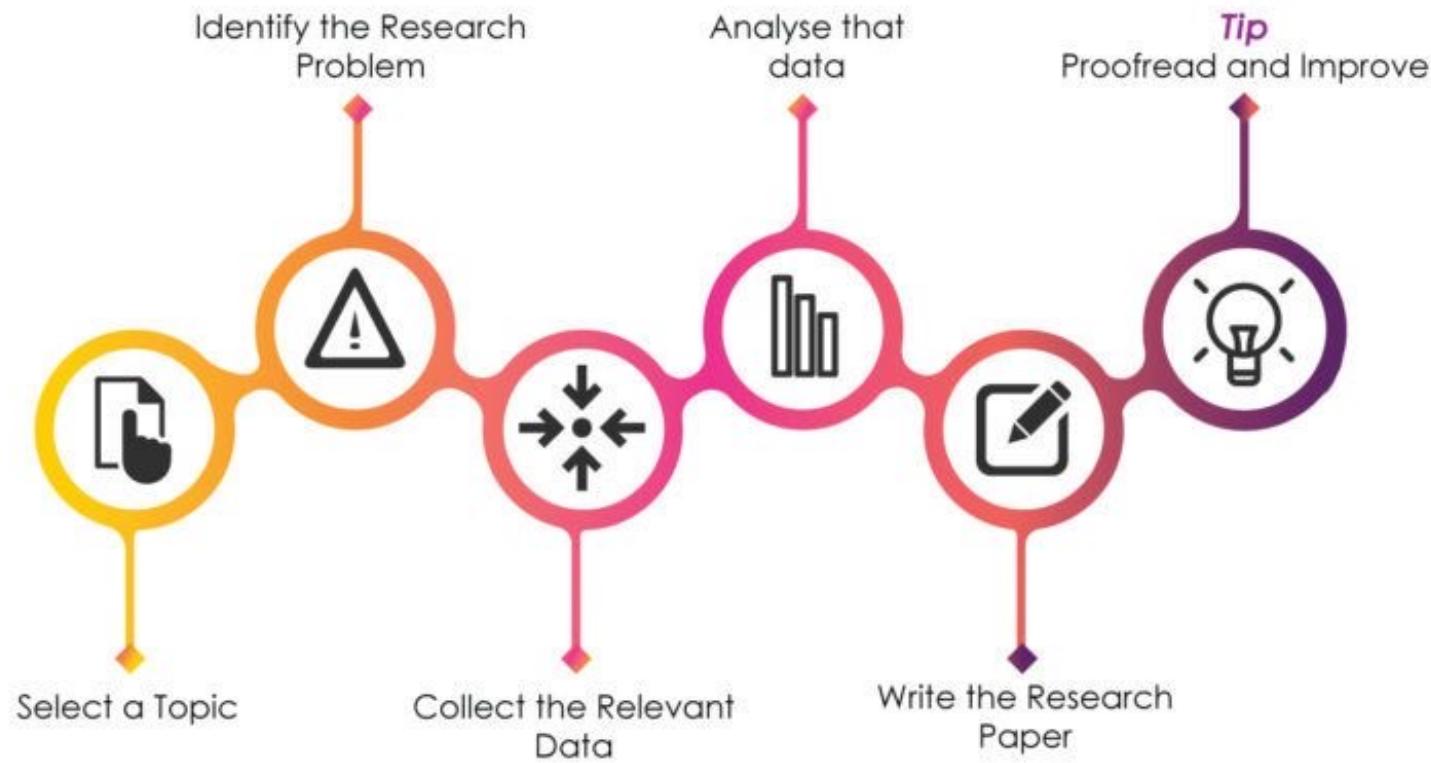
Paper Publishing Process



“Scholars regarded the new streamlined peer-review process as ‘quite an improvement.’”



Research Paper Writing



Choose your research topic

Narrow it down and find your niche

Identify a research problem

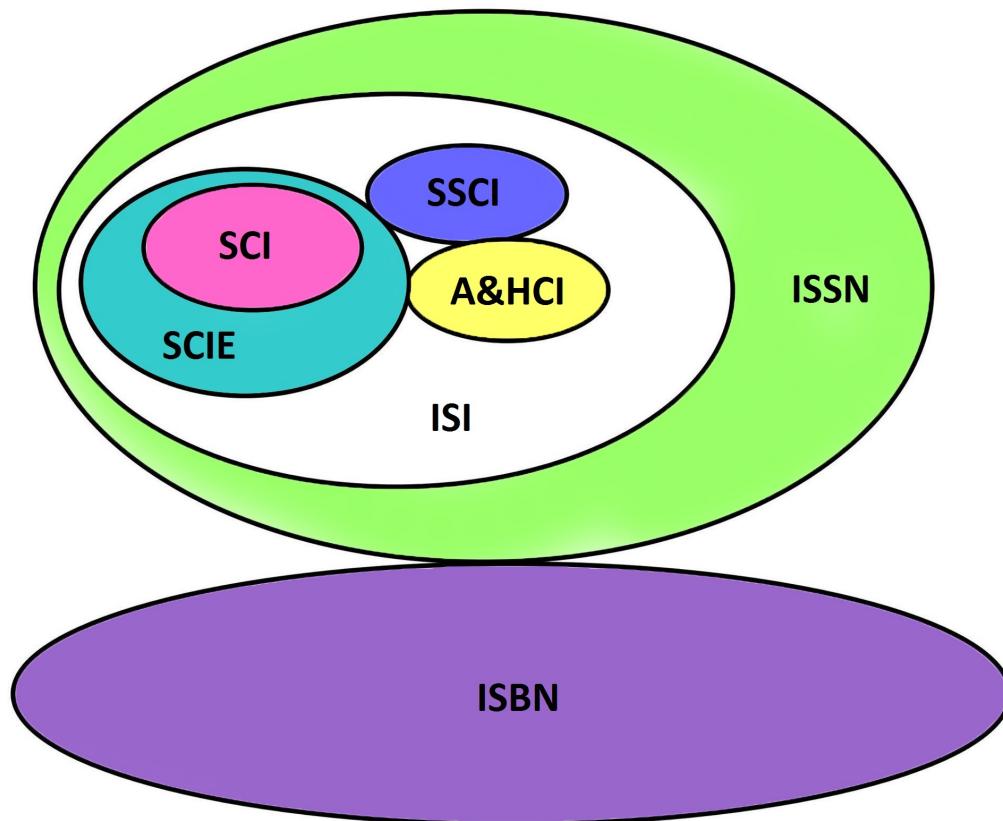
Develop clear research questions

Create a research design to answer them

Write your research proposal

International Journal Types

Tạp chí Quốc tế thuộc danh mục SCI, SCIE, SSCI, A&HCI, ISI



Institute for Scientific Information (ISI)

Science Citation Index (SCI)

Science Citation Index Expanded (SCIE)

Social Science Citation Index (SSCI)

Arts & Humanities Citation Index (A&HCI)

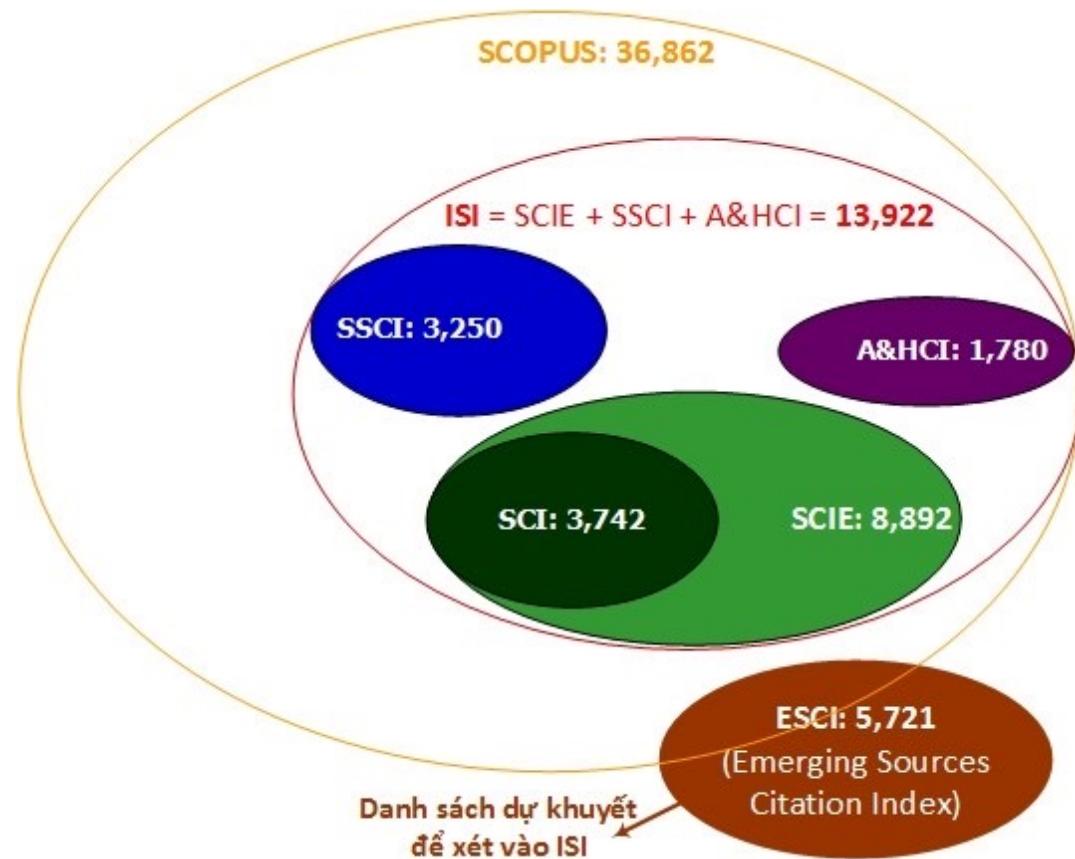
$$\text{ISI} = \text{SCIE} + \text{SSCI} + \text{A&HCI}$$

International Standard Serial Number (ISSN)

International Standard Book Number (ISBN)

International Journal Types

Tạp chí Quốc tế thuộc danh mục SCI, SCIE, SSCI, A&HCI, ISI



Institute for Scientific Information

Science Citation Index

Science Citation Index Expanded

Social Science Citation Index

Arts & Humanities Citation Index

ISI = SCIE + SSCI + A&HCI

Conference/Journal: Terminology

IEEE Transactions on Intelligent Transportation Systems



Submit
Manuscript



Add Title
To My Alerts



Add to
My Favorites



Home

Popular

Early Access

Current Issue

All Issues

About Journal

8.5

Impact
Factor

0.04359

Eigenfactor

1.676

Article
Influence
Score

11.6

CiteScore
Powered by Scopus®



Conference/Journal: Terminology

Impact Factor: How Many People Read My Article?

Journal Impact Factor is the average number of times articles from a journal published in the past two years have been cited in the JCR year. *Journal Citation Reports (JCR)* is an annual publication by [Clarivate](#).

$$\text{IF in 2019} = \frac{\text{No. of citations received in 2019 from all items published in 2017 and 2018}}{\text{No. of articles & reviews published in 2017 and 2018}}$$

For example, *Nature* had an impact factor of 41.577 in 2017:^[9]

$$\text{IF}_{2017} = \frac{\text{Citations}_{2017}}{\text{Publications}_{2016} + \text{Publications}_{2015}} = \frac{74090}{880 + 902} = 41.577.$$

This means that, on average, its papers published in 2015 and 2016 received roughly 42 citations each in 2017. 2017 impact factors are reported in 2018; they cannot be calculated until all of the 2017 publications have been processed by the indexing agency.

Conference/Journal: Terminology

Eigen Factor: How Many People Read this Journal?

Based on the number of times articles from the journal published in the past five years have been cited in the JCR year, but it also considers which journals have contributed these citations so that highly cited journals will influence the network more than lesser cited journals.

Measured by counting the total number of citations a journal receives over a five-year period. Measures the total number of citations. Measure of how many people read a journal and think its contents are important.

Example:

Let's consider two scientific journals: Journal A and Journal B.

- Journal A publishes high-quality research papers and is frequently cited by other prestigious journals.
- Journal B also publishes quality papers but is cited by a larger number of journals, including some with lower impact.

In this scenario, the Eigenfactor Score would likely be higher for Journal A. Even if Journal B has more total citations, the Eigenfactor takes into account the quality and importance of the journals that cite the articles. Therefore, a citation from a highly influential journal would contribute more to the Eigenfactor than a citation from a less influential one.

Conference/Journal: Terminology

Article Influence Score:

Has all the features of the Eigenfactor Score, with an additional normalization to the number of published papers. Hence it can be considered the average influence of a journal's articles over the first five years after publication.

$$\frac{0.01 * \text{EigenFactor Score}}{X}$$

X = 5-year Journal Article Count divided by the 5-year Article Count from All Journals.

The mean *Article Influence Score* for each article is 1.00. A score greater than 1.00 indicates that each article in the journal has above-average influence. A score less than 1.00 indicates that each article in the journal has below-average influence.

Conference/Journal: Terminology

Cites Score:

CiteScore is another metric for measuring journal impact in Scopus. The calculation of CiteScore for the current year is based on the number of citations received by a journal in the latest 4 years (including the calculation year),

$$\text{CiteScore in 2019} = \frac{\text{No. of citations received in 2016-2019 to documents published in 2016-2019}}{\text{No. of documents published in 2016-2019}}$$

Conference/Journal: Terminology

Documents include:
articles, reviews,
conference papers, data
papers and book chapters.

Documents from 4 years



Citations received in 4 years in Scopus

CiteScore (Scopus)



Citable Documents include:
articles and reviews.

Citable Documents
from 2 years

Citations received in 2019 in Web of Science

Impact Factor
(Web of Science)

Conference/Journal: Terminology

Phân biệt tên gọi SCI, SCIE cho các ấn phẩm khoa học

➤ ISI (Institute for Scientific Information, ISI, Hoa Kỳ): cơ quan xét chọn chất lượng tạp chí.

➤ SCIE (Science Citation Index Expanded) là SCI mở rộng, khoảng 7000 tạp chí.

➤ SCI (Science Citation Index) các tạp chí thuộc lĩnh vực khoa học tự nhiên, kỹ thuật, công nghệ (khoảng 4000 tạp chí)

➤ SSCI (Social Science Citation Index) khoảng 2000 tạp chí

➤ A&HCI (Arts & Humanities Citation Index) với khoảng 1.200 tạp chí xuất bản

Conference/Journal: Terminology



Vinh Dinh Nguyen 

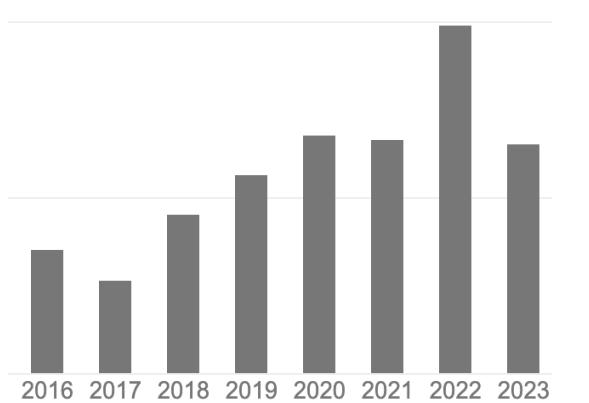
 FOLLOW

Deep learning computer vision DAS 

	CITED BY	YEAR
<input type="checkbox"/> Learning framework for robust obstacle detection, recognition, and tracking VD Nguyen, H Van Nguyen, DT Tran, SJ Lee, JW Jeon IEEE Transactions on Intelligent Transportation Systems 18 (6), 1633-1646	84	2016
<input type="checkbox"/> Support local pattern and its application to disparity improvement and texture classification VD Nguyen, DD Nguyen, TT Nguyen, VQ Dinh, JW Jeon IEEE Transactions on Circuits and Systems for Video Technology 24 (2), 263 - 276	56	2014
<input type="checkbox"/> A Fast Evolutionary Algorithm for Real-time Vehicle Detection V Nguyen, T Nguyen, D Nguyen, S Lee, J Jeon IEEE Transactions on Vehicular Technology 62 (6), 2453 - 2468	46	2013

Cited by [VIEW ALL](#)

	All	Since 2018
Citations	436	323
h-index	11	9
i10-index	12	9



Co-authors [EDIT](#)

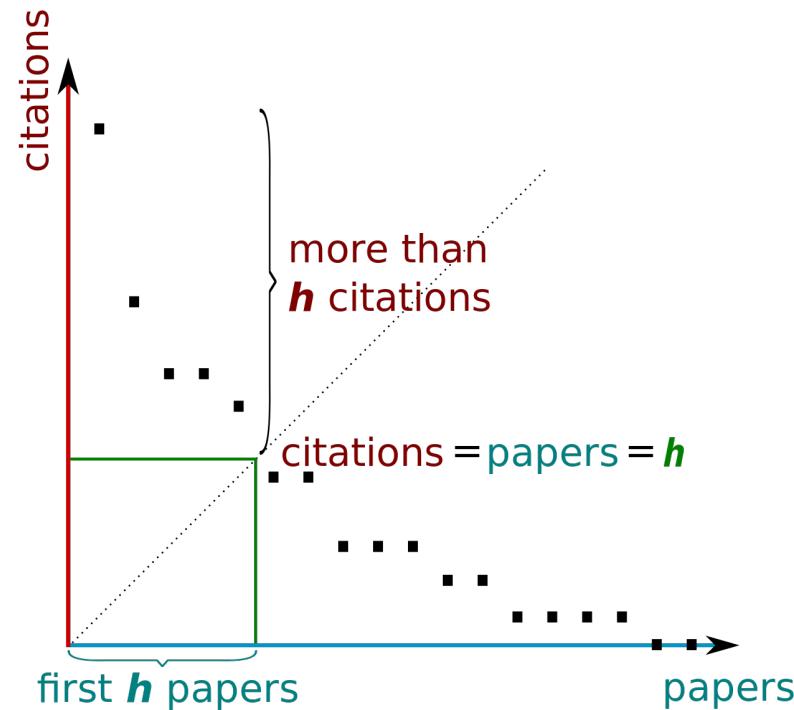
Conference/Journal: Terminology

H-index:

The h-index is a metric that quantifies both the productivity and impact of a researcher's scholarly output.

Article	Times Cited
1	50
2	15
3	12
4	10
5	8
6	7
7	5
8	1

==>h index is 6



h -index from a plot of numbers of citations for an author's numbered papers (arranged in decreasing order) <https://en.wikipedia.org/wiki/H-index>

Conference/Journal: Terminology

H-index:

The h-index is a metric that quantifies both the productivity and impact of a researcher's scholarly output.

Article	Times Cited
1	50
2	15
3	12
4	10
5	8
6	7
7	5
8	1

==>h index is 6

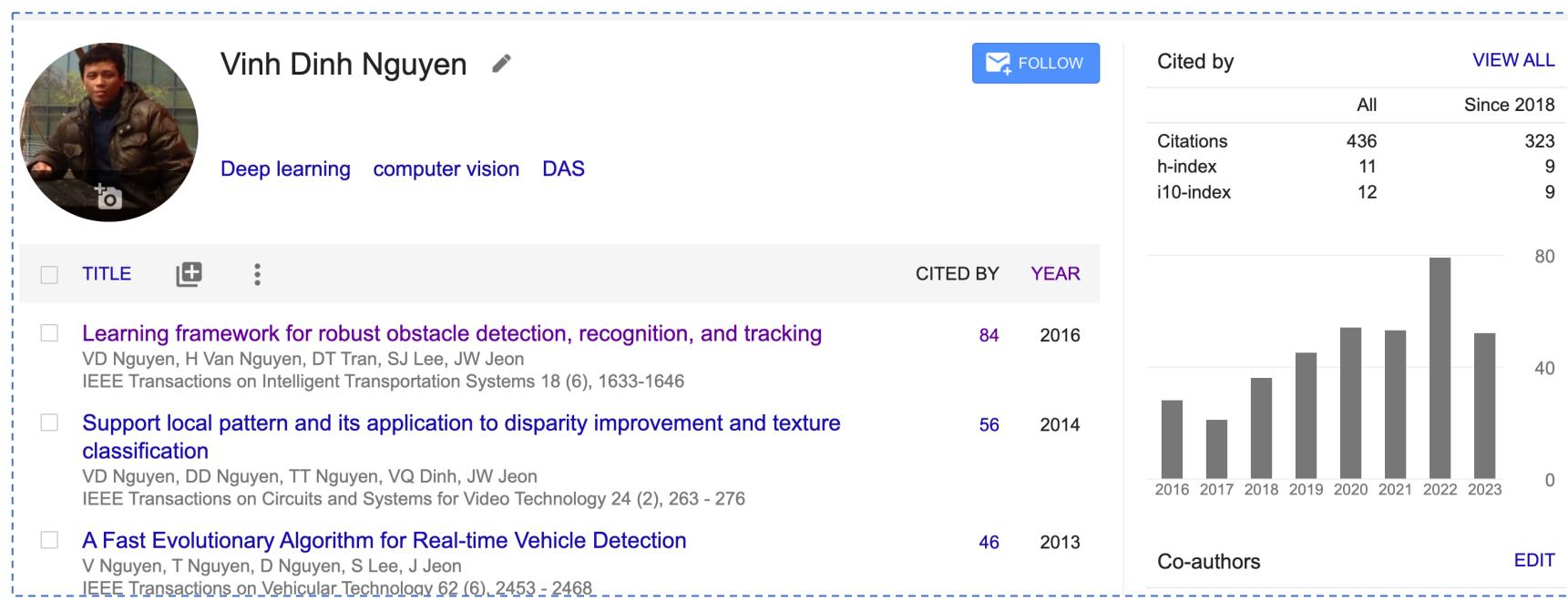
Sort the spreadsheet in descending order by the number of times each publication is cited. Then start counting down until the article number is equal to or not greater than the times cited.

The h -index is defined as the maximum value of h such that the given author/journal has published at least h papers that have each been cited at least h times

Conference/Journal: Terminology

H10-index:

an h index of 10 means that among all publications by one author, 10 of these publications have received at least 10 citations each.

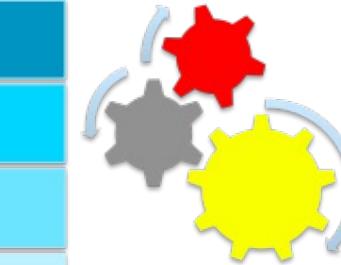


How to select a good conf./journal



Time to publication
Frequency of publication
Open access
Similar papers
Audience
Impact factor
Cost

Need to meet a tight deadline



ORDER OF IMPORTANCE

Open access
Impact factor
Audience
Similar papers
Frequency of publication
Time to publication
Cost

Required to publish open access

How to select a good conf./journal

The screenshot shows the 'Master Journal List' section of the Web of Science platform. At the top, there are links for 'Web Store', 'Bubble Sort Algor...', 'UPDATE: Stage 2...', 'Lei Mao's Log Boo...', 'Lý thuyết, Trắc ng...', 'Hướng dẫn tài, cài...', 'A Step-by-Step In...', 'Login', and 'Create Free Account'. Below this, a search bar contains the text 'ieee transaction' and a blue 'Search Journals' button. The main heading reads 'Browse, search, and explore journals indexed in the Web of Science'. A descriptive text explains that the Master Journal List is an invaluable tool to help find the right journal across multiple indices. It highlights the 'Web of Science Core Collection' and other specialty collections like 'Biological Abstracts', 'BIOSIS Previews', 'Zoological Record', and 'Current Contents Connect'. A footer at the bottom of the page includes a search bar for 'Enter Journal Title, ISSN or Publisher Name' and a magnifying glass icon.

The screenshot shows the 'Scopus Preview' section. At the top, there are links for 'Web Store', 'Bubble Sort Algor...', 'UPDATE: Stage 2...', 'Lei Mao's Log Boo...', 'Lý thuyết, Trắc ng...', 'Hướng dẫn tài, cài...', 'A Step-by-Step In...', 'Other Bookmarks', 'Author search', 'Sources', 'Create account', and social media icons for LinkedIn and Twitter. The main heading is 'Welcome to Scopus Preview'. Below it, a section titled 'What is Scopus' has a link to 'Blog'. Two main columns are shown: 'Check access' (with a 'Check Scopus access' button) and 'Check out your free author profile!' (with a 'View your author profile' link). Another column titled 'Scopus content' includes links for 'Content coverage guide', 'Scopus source list', and 'Book title list'. A final column titled 'Looking for free journal rankings and metrics?' includes a 'View journal rankings' link. On the right side, there are screenshots of the 'Sources' and 'Author profile' sections of the Scopus interface.

The screenshot shows the 'SCIMAGO INSTITUTIONS RANKINGS' section. At the top, there are links for 'Web Store', 'Bubble Sort Algor...', 'UPDATE: Stage 2...', 'Lei Mao's Log Boo...', 'Lý thuyết, Trắc ng...', 'Hướng dẫn tài, cài...', 'A Step-by-Step In...', 'Other Bookmarks', and 'Reading List'. Below this, a navigation menu includes 'Journal Rankings', 'Country Rankings', 'Viz Tools', 'Help', and 'About Us'. The main heading is 'SJR' and 'Scimago Journal & Country Rank'. A search bar at the bottom allows users to 'Enter Journal Title, ISSN or Publisher Name' and includes a magnifying glass icon. The background is orange.

The screenshot shows the 'IEEE Xplore' homepage. At the top, there are links for 'IEEE.org', 'IEEE Xplore', 'IEEE-SA', 'IEEE Spectrum', 'More Sites', 'SUBSCRIBE', 'Cart', 'Create Account', and 'Personal Sign In'. A yellow banner at the top states 'Scheduled Maintenance: On Tuesday, February 8, IEEE Xplore will undergo scheduled maintenance from 7:00-9:00pm ET. During this time, there may be intermittent impact on performance. We apologize for any inconvenience.' Below the banner, the 'IEEE Xplore' logo is displayed along with 'Browse', 'My Settings', 'Help', and 'Institutional Sign In' buttons. A large banner features the text 'Advancing Technology for Humanity' and 'SEARCH 5,559,518 ITEMS'. The search bar below includes dropdown menus for 'All', 'ADVANCED SEARCH', and 'TOP SEARCHES'. The background features a dark blue design with glowing blue lines and shapes.

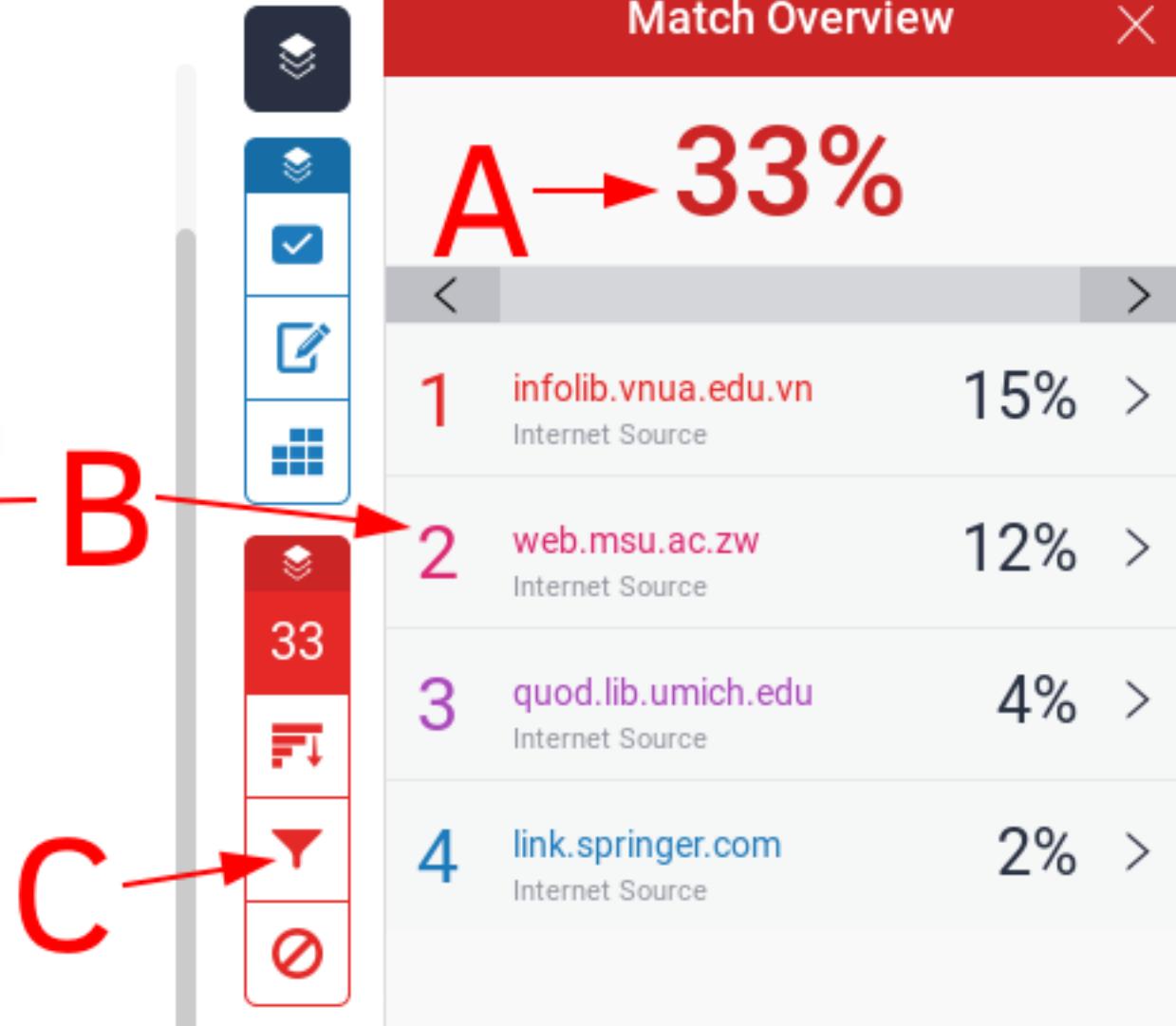


Plagiarism

range of appropriate background reading can be very daunting. Writing together your knowledge and understanding will gain an ability to use language to communicate the ideas of others as to understand what it means to cite as an academic author.

crucial academic skill: Referencing helps , at least, avoid one of the most sm is a term used to describe a practice that and claiming it, directly or indirectly, as oduced by another person, 'published' in omain. It is not the ideas per se that are t is the manifestation of those ideas: in phic or other tangible form. It can also , and sold from internet sites, which are n original work (Neville, 2010).

se ideas from others all the time, then bly taking ownership of them until we his way, referencing can become difficult, er, refers to an intentional decision not to g usually well- publicised obligations to do if it were your own is often considered a



Plagiarism

독창성 보고서

34%

유사성 지표

30%

인터넷 출처

31%

출판물

20%

학생 보고서

일차 출처

1

arxiv.org

인터넷 출처

5%

2

deepai.org

인터넷 출처

2%

3

export.arxiv.org

인터넷 출처

1 %

4

openaccess.thecvf.com

인터넷 출처

1 %

Plagiarism

Tai Journal

ORIGINALITY REPORT

86%

SIMILARITY INDEX

17%

INTERNET SOURCES

61%

PUBLICATIONS

84%

STUDENT PAPERS

PRIMARY SOURCES

1

Submitted to Higher Education Commission
Pakistan

Student Paper

79%

Plagiarism

 turnitin™

 similarity™

Plagiarism prevention trusted by educators worldwide

Make academic integrity a part of your workflow.

[Schedule a call](#)

Products ▾ Solutions ▾ Resources Support



Plagiarism



Single cell imprinting on the surface of Ag-ZnO bimetallic nanoparticle modified graphene oxide sheets for targeted detection, removal and photothermal killing of *E. Coli*

Ekta Roy^a, Santanu Patra^a, Ashutosh Tiwari^b, Rashmi Madhuri^{a*}, Prashant K. Sharm

^a Department of Applied Chemistry, Indian School of Mines, Dhanbad, Jharkhand 826004, India

^b Smart Materials and Bioelectronic, Resources and Electronics Centre, IITM-Lokayanpur University, SIT 82 82 Lokayanpur, Sonipat, Haryana 131039, India

^{*} Functional Nanomaterials Research Laboratory, Department of Applied Physics, Indian School of Mines, Dhanbad, Jharkhand 826004, India

ARTICLE INFO

Article history:

Received 25 November 2015

Received in revised form

7 December 2015

Accepted 24 December 2015

Available online 29 December 2015

Keywords:

Bacteria sensing

Removal

Photothermal killing

Imprinted polymer

GO-Ag/ZnO nanocomposite

ABSTRACT

A very cost-effective, fast, sensitive and selective sensor modified electrochemical sensor for the targeted detection, removal and destruction of *Escherichia coli* bacteria was developed onto the surface of Ag-ZnO bimetallic nanoparticle and graphene oxide nanocomposite. The nanocomposite played a dual role in this work, as a platform for imprinting of bacteria as well as participated in their laser-light induced photo killing. In terms of selectivity, our proposed sensor can detect *E. coli* as few as 10 CFU ml^{-1} and capture 99% of bacteria from their very high concentrated solution (10^5 CFU ml^{-1}). Since in the quantitative detection, we have also investigated the quantitative destruction of *E. coli* at 10^5 CFU ml^{-1} in a small area of 16 cm^2 area of polymer modified glass plate is sufficient enough to kill 10^5 CFU ml^{-1} in a small area of 16 cm^2 area of polymer modified glass plate in 5 minutes. The obtained results suggest that our proposed sensor have potential for being a promising candidate for specific and quantitative detection, removal as well as destruction of a variety of bacterial pathogens.

© 2015 Elsevier B.V. All rights reserved.

1. Introduction

With the increase in microbiological contamination in water or food beverages, their detection, as well as removal and destruction, has become a very important topic related to the health of common peoples [Altintas et al., 2015]. According to the literature, approximately 500 billion bacteria have been consumed by the worldwide food sectors every day due to the presence of food-borne bacteria [Chen et al., 2015]. These microorganisms have taken over places like restaurants for the food industries as well as commercial companies for various known bacterial strains, like *Escherichia coli* (*E. coli*), *Staphylococcus* spp. and *Salmonella* spp. *E. coli* is used as model bacteria. They are a member of a large group of bacterial strains that inhabit the intestinal tract of humans and other warm-blooded animals [Lin and Hammie, 2015]. A very low infection dose (few 10 cells only) of these bacteria can effectively able to cause serious disease and leads to the lethality of any living objects [Black, 1993]. Current and traditional methods (like plating and culture [Leoni and Legaspi, 2001], enzyme-linked immunosorbent assay (ELISA) [Nagata et al., 1997] and

polymerase chain reaction (PCR) [Roy et al., 1990]) for the identification of pathogenic bacteria are limited due to long analysis time, cost and versatility constraints [Chen et al., 2015]. Therefore, it is an urgent need to develop some reliable approaches to not only identify but also remove and kill these harmful bacteria with high specificity and sensitivity.

In this regard, we have tried to prepare polymeric bacteria catcher using a combination of molecular imprinting and nanomaterials as a cost-effective, stable, selective, safe and three-in-one system, which could catch, remove and kill the bacteria. Earlier, some molecularly imprinted polymer (MIP) matrices have been developed for detection of different bacterial [Findeisen et al., 2012] and virus [Altintas et al., 2015] strains; however, their combination with nanomaterials is currently in their infant stage [Ren and Zare, 2012]. MIPs consist of a tailored polymer matrix, formed in the presence of a template; once the template molecule was removed, a binding cavity form, which have high selectivity and sensitivity to the template in question [Roy et al., 2014].

In order to kill the bacterial strains, safely and effectively from the food or water samples, now a day, the photo thermal therapy came in light. The novel metal nanoparticles and carbonaceous nanomaterials (like graphene oxide, GO; carbon nanotubes) are very promising candidates in the field of photothermal therapy

ORIGINAL ARTICLES: ENDOMETRIOSIS

Attractiveness of women with rectovaginal endometriosis: a case-control study

Paolo Vercellini, M.D.,^a Laura Buggio, M.D.,^a Edgardo Somigliana, M.D.,^a Giussy Barbara, M.D.,^a Paola Vigano, Ph.D.,^b and Luigi Fedele, M.D.^a

^a Clinica Ostetrica e Ginecologica, Istituto "Luigi Mangiagalli" Università degli Studi, and Fondazione IRCCS "Grandi"-Ospedale Maggiore Policlinico; and ^b Istituto Scientifico San Raffaele del Monte Tabor, Milan, Italy

Objective: To evaluate physical attractiveness in women with and without endometriosis.

Design: Case-control study.

Setting: Academic hospital.

Patient(s): Three hundred nulliparous women.

Intervention(s): Assessment of attractiveness by four independent female and male observers.

Main Outcome Measure(s): A graded attractiveness rating scale.

Results: A total of 31 of 100 women in the rectovaginal endometriosis group (cases) were judged as attractive or very attractive, compared with 8 of 100 in the peritoneal and ovarian endometriosis group, and 9 of 100 in the group of subjects without endometriosis. A higher proportion of cases first had intercourse before age 18 (53%, 53%, and 30%, respectively). The mean \pm SD body mass index in women with rectovaginal endometriosis, in those with other disease, and in those without endometriosis was, respectively, 21.0 ± 2.5 , 21.3 ± 3.3 , and 22.1 ± 3.6 . The median (interquartile range) waist-to-hip ratio and breast-to-underbreast ratio were, respectively, 0.75 (0.71 – 0.81), 0.76 (0.71 – 0.81), and 0.78 (0.71 – 0.81) and 1.15 (1.12 – 1.20), 1.14 (1.10 – 1.17), and 1.15 (1.11 – 1.18).

Conclusion(s): Women with rectovaginal endometriosis were judged as more attractive than those in the two control groups. Moreover, they had a leaner physique, smaller breasts, and an earlier coitarche. [Fertil Steril® 2013;99:212–8. © 2013 by American Society for Reproductive Medicine.]

Key Words: Endometriosis, attractiveness, body mass index, body size, waist-to-hip ratio

Discuss: You can discuss this article with other ASRM members at <http://fertilsteriforum.com/vercellinip-attractiveness-women-rectovaginal-endometriosis/>



Use your smartphone to scan this QR code and connect to the discussion forum for this article now!

* Download a free QR code scanner by searching for "QR scanner" in your smartphone's app store or app marketplace.

The observation that subjects with specific anthropomorphic traits are prone to development of particular somatic or psychiatric disorders is not a new finding. Nowadays, these associations tend to be explained based on genetic or phenotype associations, which have been suggested for over one hundred disorders, including diabetes, obesity, Crohn's disease, and hypertension [1, 2]. Along this line, some recent advances in endometriosis research fit this view, as multiple studies have contributed to the definition of a general phenotype associated with the disease [3–12]. Intriguingly, such an emerging phenotype appears to be indirectly linked with attractiveness, because several of the physical characteristics studied, including body size, body mass index (BMI), and pigmentary traits [4, 5, 7, 8, 11–13], have an impact on perception of beauty [14, 15]. A biological gradient between the degree of expression of these traits and the degree of severity of endometriosis has also emerged. As an example, with regard to body size and figure, an inverse relationship has been observed between BMI and severity of the disease in general [8], and in particular in patients with deep endometriosis [12]. Despite this growing body of

How to avoid Plagiarism

3 TECHNIQUES TO AVOID PLAGIARISM

While conducting your research, you might find that others have developed similar ideas.

There could be another researcher who may have



Devised an
investigative
technique



Described the
natural history
of a disease



Discovered
the structure
of a compound



Described an
unchanging
process



This technique by Smith et. al. has been
described perfectly. I can't possibly
explain it better than them. Can I reuse
this work as it is?

Absolutely NOT! This is extremely unethical!

If you use the existing ideas, words, or work of another person,
without giving them due credit, you are plagiarizing their work.

So what if I want to use part of
another researcher's work? Is
there an ethical way to do this?



YES! And there's more than one way to avoid plagiarism!

Here are 3 things you could do:

Quote

Use the exact same
words as the original

Paraphrase

Rewrite the original ideas
in your own words

Summarize

Put the original ideas into
your own words

The quoted sentence must be
enclosed within double quotes
("...") or set apart from the rest
of the text as a block quotation

The paraphrased sentence
must only match the source
document in terms of meaning,
not exact words

The summarized text must
provide a short overview of the
source text and be much
shorter than the original
version

4 simple steps to avoid plagiarism

1. Proper Citation

2. Paraphrase

3. Original write up

4. Use of plagiarism
checker tool

Avoiding Plagiarism



How to find a Suitable Journal to publish **MY RESEARCH PAPERS?**

www.conferencealerts.co.in



Who we serve ▾

Products & Services ▾

Resources ▾

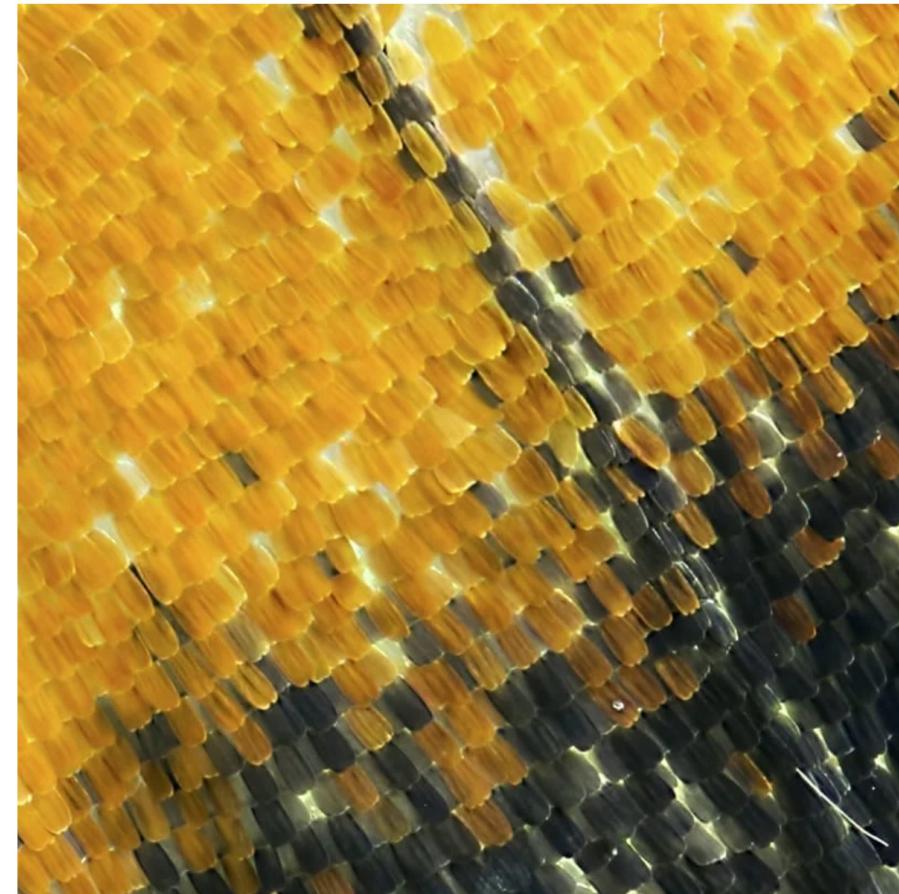
Contact us

Journal Citation Reports

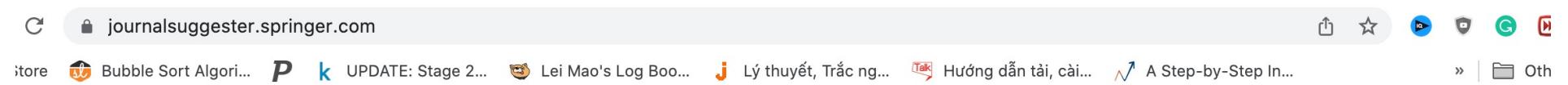
Assess the world's leading journals with publisher-neutral data.

Contact us

Go to product



How to find a suitable journal



Suggest journals

Multimedia Tools and Applications

OA S

2.757
Impact factor

157 days
First decision (average)

41%
Acceptance rate



The Journal of Supercomputing

OA S

2.474
Impact factor

87 days
First decision (average)

26%
Acceptance rate



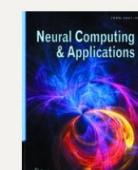
Neural Computing and Applications

OA S

5.606
Impact factor

77 days
First decision (average)

26%
Acceptance rate



<https://journalsuggester.springer.com/>

How to find suitable journal

Research.com

Upcoming Conferences ▾ Best Conferences ▾ Best Journals ▾ Best Universities ▾ Best Scientists ▾

Home / Best Journals - Computer Science

Best Computer Science Journals

This ranking of top journals for Computer Science was devised by Research.com, one of the prominent platforms for Computer Science research offering trusted information on scientific contributions since 2014.

The spot in the ranking is based on a novel bibliometric score devised by Research.com which is computed by means of the estimated discipline index (D-index) in addition to the number of leading scientists that have endorsed the journal within the last five previous years. [Show more](#)

Computer Science ▾ All research areas ▾ All publishers ▾

Search by name 

Rank	Journal Details	Best Scientists	Documents	Impact Score
1	IEEE Transactions on Pattern Analysis and Machine Intelligence 0162-8828 , Monthly	834	1158	37.80
	IEEE Transactions on Image Processing			

Research.com

Upcoming Conferences ▾ Best Conferences ▾ Best Journals ▾ Best Universities ▾ Best Scientists ▾

Home / Best Conferences - Computer Science

Best Computer Science Conferences

The ranking of leading conferences for Computer Science was published by Research.com, one of the leading platforms for Computer Science research providing trusted information on scientific contributions since 2014.

The spot on the list is based on Impact Score values collected on 06-12-2021. It was based on a careful examination of as much as 3,825 conference profiles and websites. [Show more](#)

Computer Scienc: ▾ All research area: ▾ All publishers ▾ All countries ▾ Paper submission open

Search by name 

Rank	Conference Details	Impact Score
1	IEEE Computer Vision and Pattern Recognition 18-06-2023 - 22-06-2023 - Vancouver	63.10
2	WAGENINGEN Neural Information Processing Systems 12-12-2023 - 14-12-2023 - New Orleans	42.30

<https://research.com/>

BEALL'S LIST

OF POTENTIAL PREDATORY JOURNALS AND PUBLISHERS

PUBLISHERS

STANDALONE JOURNALS

VANITY PRESS

CONTACT

OTHER

Search for publishers (name or URL)

Potential predatory scholarly open-access publishers

Instructions: first, find the journal's publisher – it is usually written at the bottom of the journal's webpage or in the "About" section. Then simply enter the publisher's name or its URL in the search box above. If the journal does not have a publisher use the [Standalone Journals](#) list.

All journals published by a predatory publisher are potentially predatory unless stated otherwise.

Original list

This is an archived version of the Beall's list – a list of potential predatory publishers created by a librarian [Jeffrey Beall](#). We will only update links and add notes to this list.

GO TO UPDATE

Useful pages

[List of journals falsely claiming to be indexed by DOAJ](#)

[DOAJ: Journals added and removed](#)

[Nonrecommended medical periodicals](#)

[Retraction Watch](#)

[Elaky Academic Journals Blog](#)

Open Access Vs Subscription-Based Journals



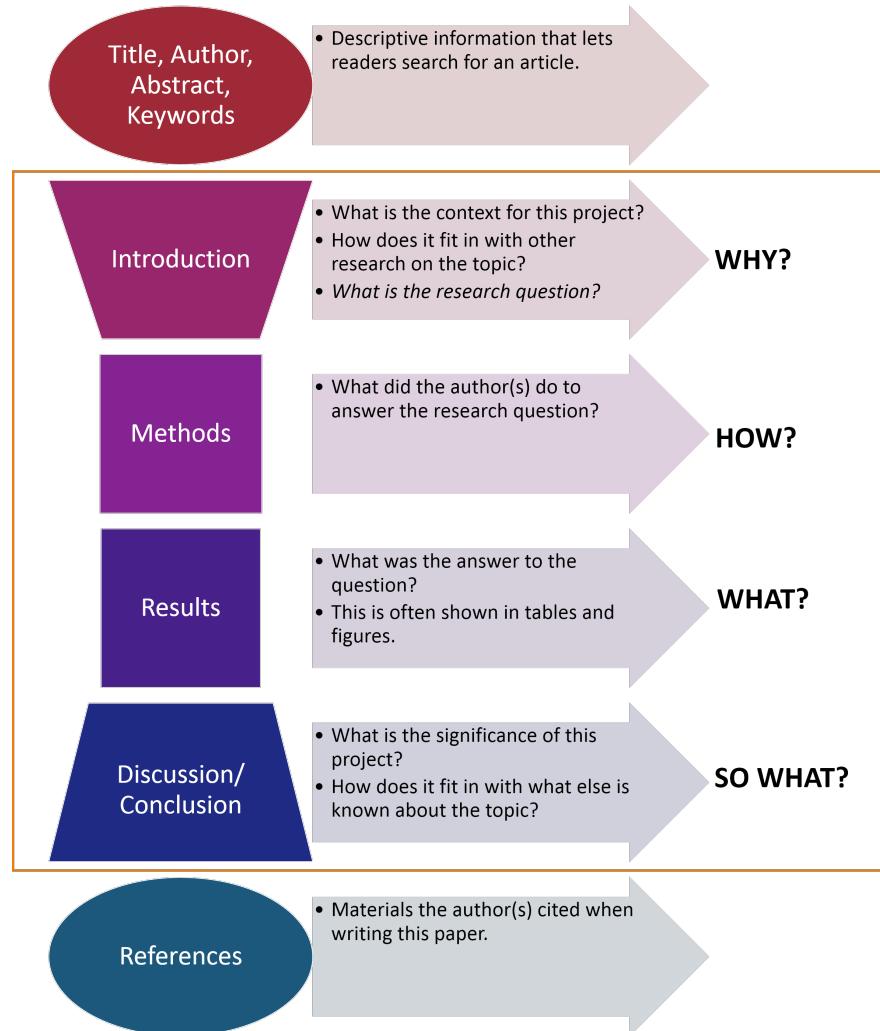
Open Access Vs Subscription-Based Journals



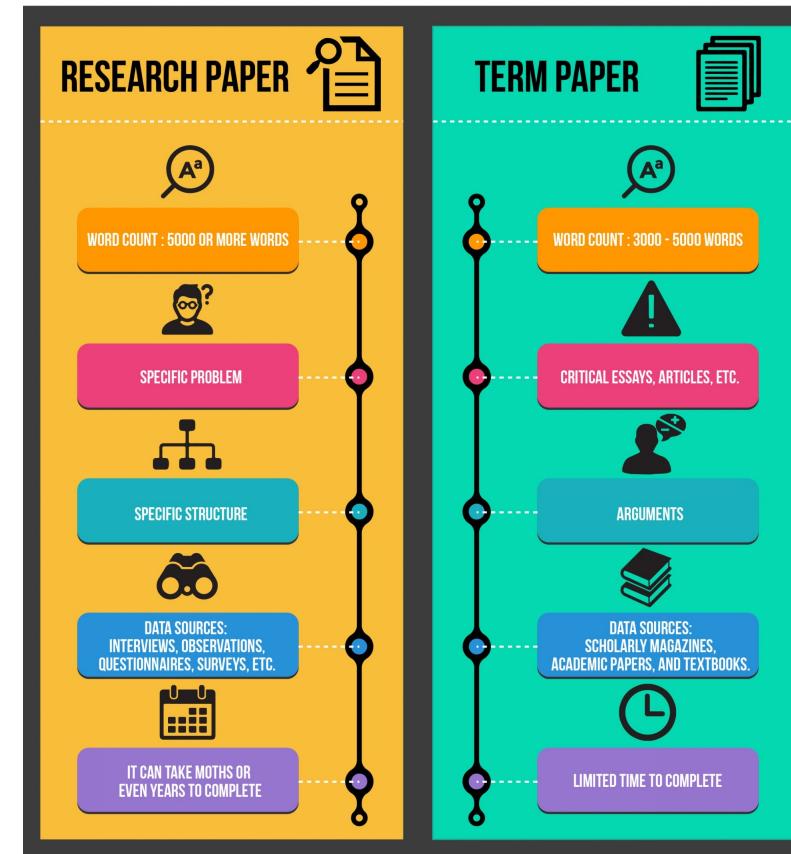
Outline

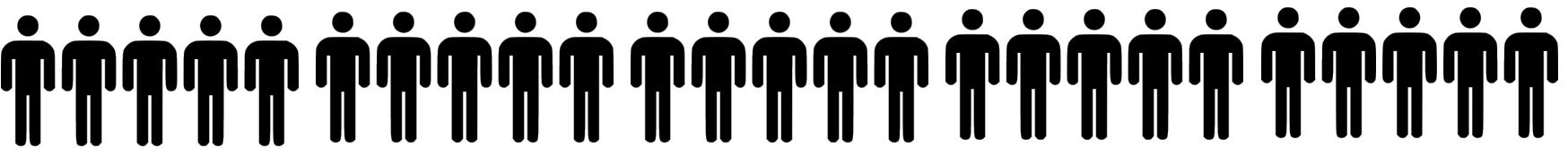
- **Introduction to Scientific Research Paper**
- **What is Research Paper Structure**
- **How to find Research Paper**
- **How to read Research Paper**
- **How to summary Research Paper**
- **Assignment**

Research Paper Structure



DIFFERENCE BETWEEN RESEARCH PAPER AND TERM PAPER

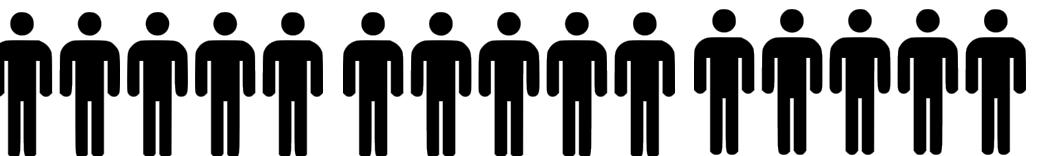




Abstract



Introduction



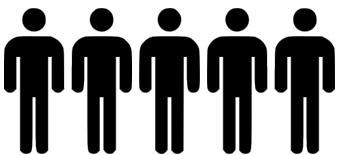
Related Work



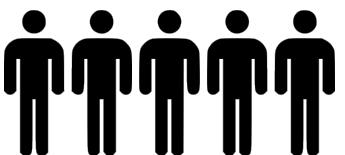
Proposed Method



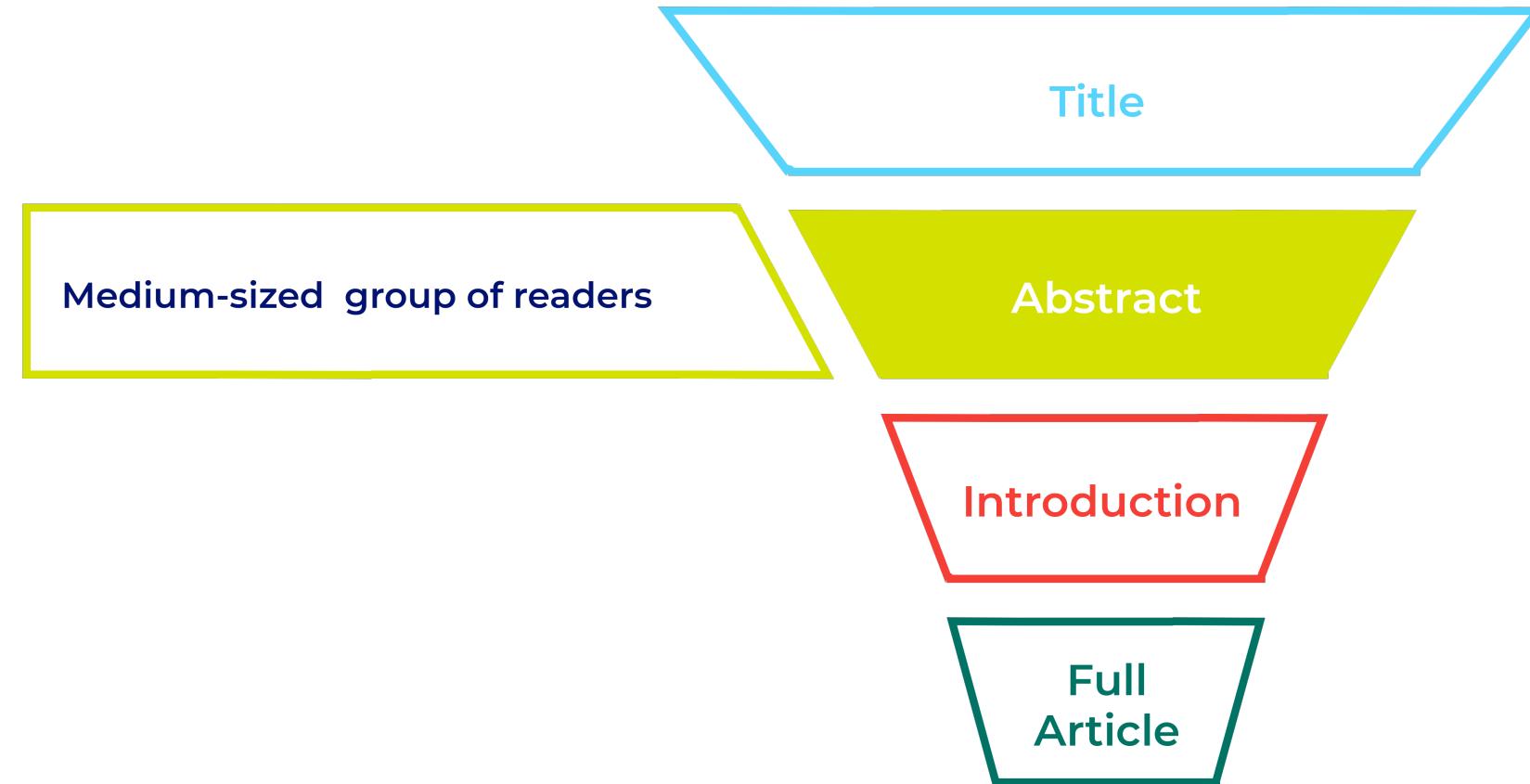
Experimental Result



Conclusion



Research Paper Structure



Deeper engagement with your work and citations

Research Paper Structure

1 Abstract

Why you should read this paper



2 Introduction

High-level overview of the algorithm



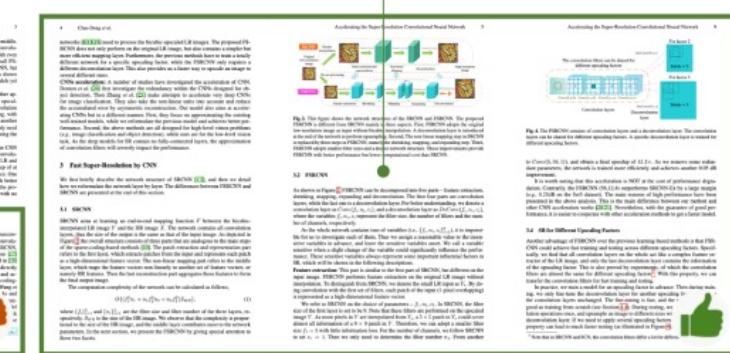
3 Related Work

What other researchers did in this field



4 Approach

Detailed description of the algorithm



5 Experiments

Training, evaluation, visualization, comparisons with other papers



6 Conclusion

Sometimes it's about next research topics



7 References

Links to all papers that ideas were used



Read thoughtfully,
maybe several times

Look through, read only
parts you are interested in

Feel free to skip
completely

Vinh Dinh Nguyen- PhD in Computer Science

48

Authors order in a Research Paper

Conference Paper Title*

*Note: Sub-titles are not captured in Xplore and should not be used

1st Given Name Surname
dept. name of organization (of Aff.)
name of organization (of Aff.)
City, Country
email address or ORCID

2nd Given Name Surname
dept. name of organization (of Aff.)
name of organization (of Aff.)
City, Country
email address or ORCID

3rd Given Name Surname
dept. name of organization (of Aff.)
name of organization (of Aff.)
City, Country
email address or ORCID

5th Given Name Surname
dept. name of organization (of Aff.)
name of organization (of Aff.)
City, Country
email address or ORCID

6th Given Name Surname
dept. name of organization (of Aff.)
name of organization (of Aff.)
City, Country
email address or ORCID



Abstract—This document is a model and instructions for L^AT_EX. This and the IEEETran.cls file define the components of your paper [title, text, heads, etc.]. *CRITICAL: Do Not Use Symbols, Special Characters, Footnotes, or Math in Paper Title or Abstract.

Index Terms—component, formatting, style, styling, insert

A. Abbreviations and Acronyms

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, ac, dc, and rms do not have to be defined. Do not use abbreviations

Authors order in a Research Paper

Contribution Title*

First Author¹[0000–1111–2222–3333], Second Author^{2,3}[1111–2222–3333–4444], and
Third Author³[2222–3333–4444–5555]

¹ Princeton University, Princeton NJ 08544, USA

² Springer Heidelberg, Tiergartenstr. 17, 69121 Heidelberg, Germany

lncs@springer.com

<http://www.springer.com/gp/computer-science/lncs>

Rupert-Karls-University Heidelberg, Heidelberg, Germany

{abc,lncs}@uni-heidelberg.de



The abstract should briefly summarize the contents of the 50 words.

First keyword · Second keyword · Another keyword.

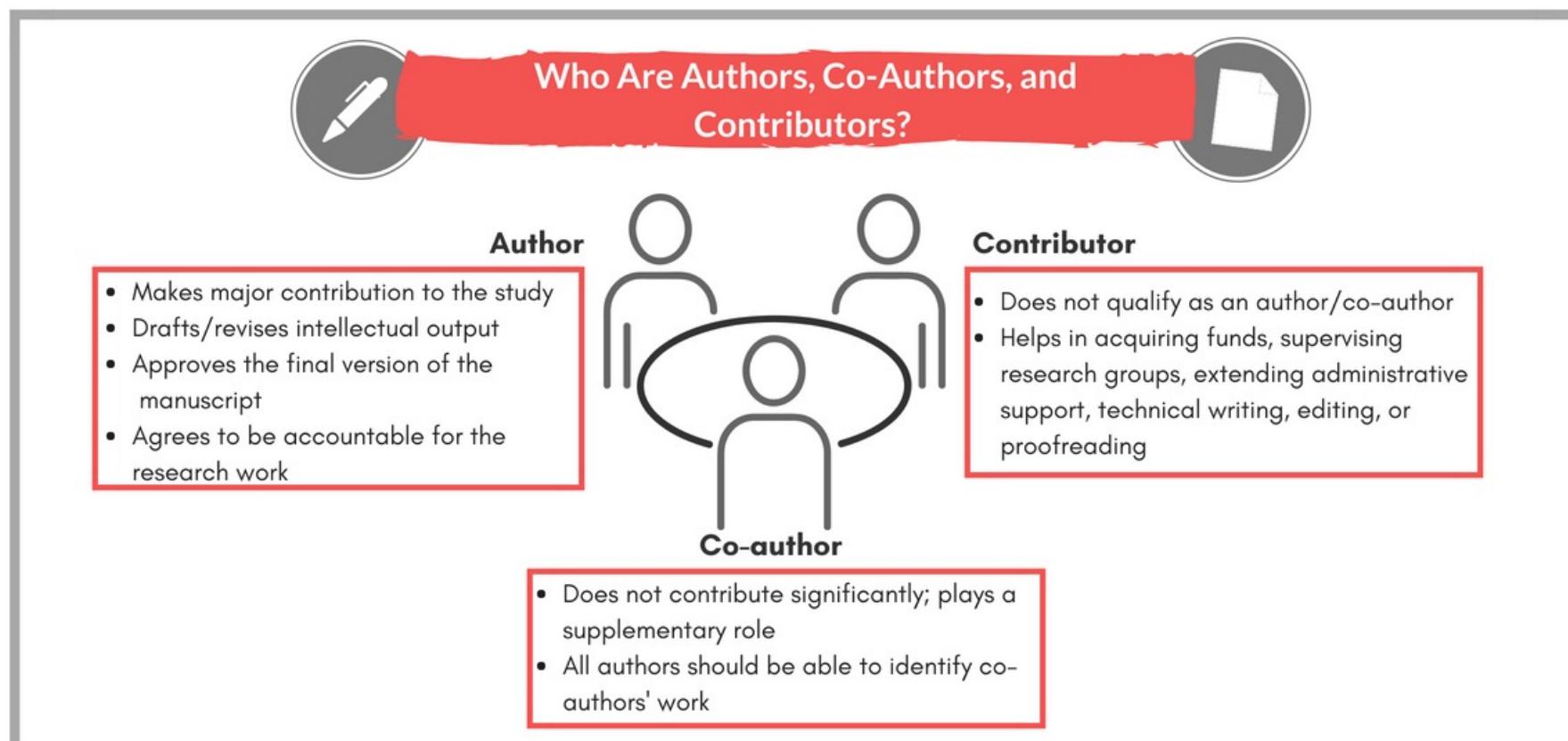
1 First Section

1.1 A Subsection Sample

Please note that the first paragraph of a section or subsection is not indented. The first paragraph that follows a table, figure, equation etc. does not need an

Authors order in a Research Paper

Author weightage in multi-authored research paper



Authors order in a Research Paper

The first author should be that person who contributed most to the work, including writing of the manuscript.

The sequence of authors should be determined by the relative overall contributions to the manuscript.

It is common practice to have the senior author appear last, sometimes regardless of his or her contribution. The senior author, like all other authors, should meet all criteria for authorship

THE AUTHOR LIST: GIVING CREDIT WHERE CREDIT IS DUE

The first author
Senior grad student on the project. Made the figures.

The third author
First year student who actually did the experiments, performed the analysis and wrote the whole paper. Thinks being third author is "fair".

The second-to-last author
Ambitious assistant professor or post-doc who instigated the paper.

Michaels, C., Lee, E. F., Sap, P. S., Nichols, S. T., Oliveira, L., Smith, B. S.

The second author
Grad student in the lab that has nothing to do with this project, but was included because he/she hung around the group meetings (usually for the food).

The middle authors
Author names nobody really reads. Reserved for undergrads and technical staff.

The last author
The head honcho. Hasn't even read the paper but, hey, he got the funding, and his famous name will get the paper accepted.

Authors order in a Research Paper

Author weightage in multi-authored research paper

Support Local Pattern and Its Application to Disparity Improvement and Texture Classification

Vinh Dinh Nguyen, Dung Duc Nguyen, Thuy Tuong Nguyen, Vinh Quang Dinh and Jae Wook Jeon,
Member, IEEE

Abstract—The Local Binary Pattern (LBP) and its variants have been widely investigated in many image processing and computer vision applications due to their robust ability to capture local image structures and because of their computational simplicity. The existing LBPs extract local structure information by establishing a relationship between the central pixel and its adjacent pixels. However, most local binary patterns miss the relationship among all of the pixels in the local region. Therefore, this paper proposes a novel model to establish this relationship by introducing a support local binary pattern (SLBP). The proposed model improves the performance of the existing LBP methods and results in lower sensitivity to illumination changes and radiometric variations. Moreover, the proposed model has been successfully investigated in two applications: disparity map generation and texture classification. For disparity map generation, the proposed model reduces the root mean square error (RMS) by 23.6% (in Baby1 dataset, Middlebury), and 16.58% (in Aloe dataset, Middlebury) as compared with the standard LBP under radiometric variation conditions. Moreover, the proposed model reduces the RMS by 28.11% as compared with the standard LBP under the Gaussian noise condition in the ESATS dataset. For texture classification applications, the proposed model improves the classification results from 96.26% to 98.13% on the Outtext database, from 88.03% to 91.41% on

variants into five main categories: multi-scale analysis, handling rotation, handling color, complementary descriptors, and feature selection and learning, as in [3]. Texture classification has been one of the most popular and successful applications that has used LBP during the past few years.

Texture classification is an application that is used to assign an unknown texture to the set of pre-defined textures. The assignment process can be based on the training of VZMR8, VZ_Joint [4] [5], or free training [6]. VZMR8 uses a pre-defined texton library that is constructed from a training set and a set of filter banks in order to classify the unknown texture. A texture data set is divided into two sets, one of which is for a sample model and one that is used for testing during the free training. In conventional LBP [1], a uniform pattern is used to extract the texture information. It achieves very good accuracy in texture classification by combining multiple-scale LBPs, which work well in the case of straight edges or low curvature edges. However, this method is not successful in cases with complicated shapes such as crossing boundaries or corners, as shown in [7]. The Dominant Local

Outline

- **Introduction to Scientific Research Paper**
- **What is Research Paper Structure**
- **How to find Research Paper**
- **How to read Research Paper**
- **How to summary Research Paper**
- **Assignment**

How to find a research paper

The screenshot shows the Google Scholar search interface with the query "text-image retrieval". The results page displays three academic papers:

- Remote sensing cross-modal text-image retrieval based on global and local information** [PDF] arxiv.org. Published by Z Yuan, W Zhang, C Tian, X Rong... - ... on Geoscience and ..., 2022 - ieeexplore.ieee.org. The abstract discusses comparative experiments on RS text-image datasets and presents related work on RS text-image retrieval and graph neural networks.
- Deep unsupervised contrastive hashing for large-scale cross-modal text-image retrieval in remote sensing** [PDF] arxiv.org. Published by G Mikriukov, M Ravanbakhsh, B Demir - arXiv preprint arXiv:2201.08125, 2022 - arxiv.org. The abstract explains cross-modal text-image retrieval challenges and proposes a solution using contrastive hashing.
- U-BERT for Fast and Scalable Text-Image Retrieval** [PDF] archive.org. Published by T Yu, H Fei, P Li - ... Conference on Theory of Information Retrieval, 2022 - dl.acm.org. The abstract highlights the use of U-BERT for fast and scalable text-image retrieval, mentioning the extraction of global text/image embeddings.

On the left sidebar, filters are applied: Any time, Since 2023, Since 2022, Since 2019, and Custom range... The Sort by relevance and Sort by date options are also visible. Advanced search filters include include patents (unchecked), include citations (checked), and Create alert (unchecked).

How to find a research paper

What to look ?

Specific

Year

Journal

Author

Where to look ?



ScienceDirect

Outline

- **Introduction to Scientific Research Paper**
- **What is Research Paper Structure**
- **How to find Research Paper**
- **How to read Research Paper**
- **How to summary Research Paper**
- **Assignment**

How to Read a Research Paper

IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, VOL. 24, NO. 2, FEBRUARY 2014

263

Step 1:

Read Paper Title and answer the following questions?

1. What is the research topic?
2. Is it closed to your research interest?
3. Is it a new research approach?
4. General idea of what the research is about
5. Does the title use keywords that are relevant to the topic?
6. Does the title catch your attention or pique your interest in the research?

Support Local Pattern and Its Application to Disparity Improvement and Texture Classification

Vinh Dinh Nguyen, Dung Duc Nguyen, Thuy Tuong Nguyen, Vinh Quang Dinh, and Jae Wook Jeon, *Member, IEEE*

Abstract—The local binary pattern (LBP) and its variants have been widely investigated in many image processing and computer vision applications due to their robust ability to capture local image structures and their computational simplicity. The existing LBPs extract local structure information by establishing a relationship between the central pixel and its adjacent pixels. However, most LBPs miss the relationship among all of the pixels in the local region. Therefore, this paper proposes a novel model to establish this relationship by introducing a support LBP. The proposed model improves the performance of the existing LBP methods and results in lower sensitivity to illumination changes and radiometric variations. Moreover, the proposed model has been successfully investigated in two applications: disparity map generation and texture classification. For disparity map generation, the proposed model reduces the root mean square (RMS) error by 23.6% (in Baby1 dataset, Middlebury), and 16.58% (in Aloe dataset, Middlebury) as compared with the standard LBP under radiometric variation conditions. Moreover, the proposed model reduces the RMS by 28.11% as compared with the standard LBP under the Gaussian noise condition in the ESATS dataset. For texture classification applications, the proposed model improves the classification results from 96.26% to 98.13% on the Outext database, from 88.03% to 91.41% on the Xu database, and from 94.00% to 96.67% on the KTH-TIPS database as compared with the completed LBP.

method that extracts the structure of the local region based on the differences in intensity between the central pixel and its adjacent pixels. Generally, we can classify the LBP and its variants into five main categories: multiscale analysis, handling rotation, handling color, complementary descriptors, and feature selection and learning, as in [3]. Texture classification has been one of the most popular and successful applications that has used LBP during the past few years.

Texture classification is an application that is used to assign an unknown texture to the set of predefined textures. The assignment process can be based on the training of VZMR8, VZ_Joint [4], [5], or free training [6]. VZMR8 uses a predefined texton library that is constructed from a training set and a set of filter banks in order to classify the unknown texture. A texture dataset is divided into two sets, one of which is for a sample model and one that is used for testing during the free training. In conventional LBP [1], a uniform pattern is used to extract the texture information. It achieves very good accuracy in texture classification by combining multiple-scale LBPs, which work well in the case of straight edges or low curvature edges. However, this method is not successful in cases with



How to Read a Research Paper

IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, VOL. 24, NO. 2, FEBRUARY 2014

263

Step 2:

Look at the authors of the paper and answer the following questions?

1. Who are the authors of the paper?
2. Are their main research topics?
3. Do they have any related publications?
4. Is there a corresponding author indicated, and what are their contact details?

Support Local Pattern and Its Application to Disparity Improvement and Texture Classification

Vinh Dinh Nguyen, Dung Duc Nguyen, Thuy Tuong Nguyen, Vinh Quang Dinh, and Jae Wook Jeon, *Member, IEEE*

Abstract—The local binary pattern (LBP) and its variants have been widely investigated in many image processing and computer vision applications due to their robust ability to capture local image structures and their computational simplicity. The existing LBPs extract local structure information by establishing a relationship between the central pixel and its adjacent pixels. However, most LBPs miss the relationship among all of the pixels in the local region. Therefore, this paper proposes a novel model to establish this relationship by introducing a support LBP. The proposed model improves the performance of the existing LBP methods and results in lower sensitivity to illumination changes and radiometric variations. Moreover, the proposed model has been successfully investigated in two applications: disparity map generation and texture classification. For disparity map generation, the proposed model reduces the root mean square (RMS) error by 23.6% (in Baby1 dataset, Middlebury), and 16.58% (in Aloe dataset, Middlebury) as compared with the standard LBP under radiometric variation conditions. Moreover, the proposed model reduces the RMS by 28.11% as compared with the standard LBP under the Gaussian noise condition in the ESATS dataset. For texture classification applications, the proposed model improves the classification results from 96.26% to 98.13% on the Outext database, from 88.03% to 91.41% on the Xu database, and from 94.00% to 96.67% on the KTH-TIPS database as compared with the completed LBP.

method that extracts the structure of the local region based on the differences in intensity between the central pixel and its adjacent pixels. Generally, we can classify the LBP and its variants into five main categories: multiscale analysis, handling rotation, handling color, complementary descriptors, and feature selection and learning, as in [3]. Texture classification has been one of the most popular and successful applications that has used LBP during the past few years.

Texture classification is an application that is used to assign an unknown texture to the set of predefined textures. The assignment process can be based on the training of VZMR8, VZ_Joint [4], [5], or free training [6]. VZMR8 uses a predefined texton library that is constructed from a training set and a set of filter banks in order to classify the unknown texture. A texture dataset is divided into two sets, one of which is for a sample model and one that is used for testing during the free training. In conventional LBP [1], a uniform pattern is used to extract the texture information. It achieves very good accuracy in texture classification by combining multiple-scale LBPs, which work well in the case of straight edges or low curvature edges. However, this method is not successful in cases with

Decision



How to Read a Research Paper

Step 2:

Look at the authors of the paper and answer the following questions?

1. Who are the authors of the paper?
2. Are their main research topics?
3. Do they have any related publications?
4. Is there a corresponding author indicated, and what are their contact details?

- [37] C. D. Pantilie and S. Nedevschi, "Real time obstacle detection in complex scenarios using dense stereo vision and optical flow," in *Proc. 13th Int. IEEE Intell. Transp. Syst.*, 2010, pp. 439–444.
- [38] M. Nishigaki and Y. Aloimonos, "Moving obstacle detection using cameras for driver assistance system," in *Proc. IEEE Intell. Veh. Symp.*, 2010, pp. 805–812.
- [39] U. Franke, C. Rabe, H. Badino, and S. Gehrig, "6D-vision: Fusion of stereo and motion for robust environment perception," in *Proc. DAGM Conf. Pattern Recog.*, 2005, pp. 216–223.
- [40] B. Jhne, *Digital Image Processing*, 6th ed. New York, NY, USA: Springer-Verlag, 2005, pp. 91–142.
- [41] Z. Zhang, "A flexible new technique for camera calibration," *IEEE Trans. Pattern Anal. Mach. Intell.*, vol. 22, no. 11, pp. 1330–1334, Nov. 2000.
- [42] D. E. Goldberg, *Genetic Algorithms in Search, Optimization, and Machine Learning*. Reading, MA, USA: Addison-Wesley, 1989.
- [43] R. Labayrade, D. Aubert, and D. J. P. Tarel, "Real time obstacle detection on non flat road geometry through v-disparity representation," in *Proc. IEEE Symp. Intell. Veh.*, 2002, vol. 2, pp. 646–651.
- [44] C. Pocoi, S. Nedevschi, and M. M. Meinecke, "Obstacle detection based on dense stereovision for urban ACC systems," in *Proc. Int. Workshop on Intell. Transp.*, 2008, pp. 13–18.
- [45] E. K. P. Chong and S. H. Zak, *An Introduction to Optimization*, 2nd ed. Hoboken, NJ, USA: Wiley, 2001, pp. 187–212.
- [46] T. Bickle and L. Thiele, "A mathematical analysis of tournament selection," in *Proc. Int. Conf. Genetic Algorithms*, 1995, pp. 9–16.
- [47] S. Sivaraman and M. M. Trivedi, "Active learning based robust monocular vehicle detection for on-road safety systems," in *Proc. IEEE Symp. Intell. Veh.*, 2009, pp. 399–404.
- [48] C.-C. R. Wang and J.-J. J. Lien, "Automatic vehicle detection using local features—A statistical approach," *IEEE Trans. Intell. Transp. Syst.*, vol. 9, no. 1, pp. 83–96, Mar. 2008.
- [49] Y.-M. Chan, S.-S. Huang, L.-C. Fu, and P.-Y. Hsiao, "Vehicle detection under various lighting conditions by incorporating particle filter," in *Proc. IEEE Int. Conf. Intell. Transp. Syst.*, 2007, pp. 534–539.
- [50] B. Dai, "A vehicle detection method via symmetry in multi-scale windows," in *Proc. IEEE Conf. Ind. Electron. Appl.*, 2007, pp. 1827–1831.
- [51] B. Leibe, A. Leonardis, and B. Schiele, "Robust object detection with interleaved categorization and segmentation," *Int. J. Comput. Vis.*, vol. 77, no. 1–3, pp. 259–289, May 2008.
- [52] S. Bauer, S. Kohler, K. Doll, and U. Brunsmann, "FPGA-GPU architecture for kernel SVM pedestrian detection," in *Proc. IEEE Int. Comput. Vis. Pattern Recog. Workshops*, 2010, pp. 61–68.
- [53] T. Machida and T. Naito, "GPU & CPU cooperative accelerated pedestrian and vehicle detection," in *Proc. IEEE Int. Comput. Vis. Workshops*, 2011, pp. 506–513.



Vinh Dinh Nguyen received the B.S. degree (*magna cum laude*) in computer science from Nong Lam University, Ho Chi Minh City, Vietnam, in 2007 and the M.S. degree in electrical and computer engineering from Sungkyunkwan University, Suwon, Korea, in 2012. He is currently working toward the Ph.D. degree with the School of Information and Communication Engineering, Sungkyunkwan University.

His research interest include computer vision, image processing, and graphics processing unit computing.

Computer vision, image processing, and robotics automation

How to Read a Research Paper

IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, VOL. 24, NO. 2, FEBRUARY 2014

263

Step 2:

Look at the authors of the paper and answer the following questions?

1. Who are the authors of the paper?
2. Are their main research topics?
3. Do they have any related publications?
4. Is there a corresponding author indicated, and what are their contact details?

Abstract-based methods have been computer vision tasks such as local image segmentation, existing LBP methods have a relationship between pixels in the image. However, most of the pixels in the model to estimate the disparity map. The proposed LBP method can change the model has a relationship between pixels in the disparity map generated by the square (RMSE) and 16.58% standard deviation. The proposed method with the standard deviation of the ESATSS proposed method is 98.13% compared to the Xu database as follows.

Support Local Pattern and Its Application to Disparity Improvement and Texture Classification

Vinh Dinh Nguyen, Dung Duc Nguyen, Thuy Tuong Nguyen, Vinh Quang Dinh, and

Vinh Dinh Nguyen     

> Home > Persons

2020 – today 

2023

[j11]      Vinh Dinh Nguyen, Thong Duc Trinh, Hoang Ngoc Tran: **A Robust Triangular Sigmoid Pattern-Based Obstacle Detection Algorithm in Resource-Limited Devices.** IEEE Trans. Intell. Transp. Syst. 24(6): 5936-5945 (2023)

[c11]      Vinh Dinh Nguyen, Thanh Hoang Tran, Doan Thai Dang, Narayan C. Debnath: **Robust Vehicle Detection by Using Deep Learning Feature and Support Vector Machine.** AICV 2023: 149-157

[c10]      Vinh Dinh Nguyen, Ngoc Phuong Ngo, Narayan C. Debnath: **Leaf Disease Detection in Blueberry Using Efficient Semi-supervised Learning Approach.** AICV 2023: 188-196

[c9]      Bach Hoang Ngo, Dat Thanh Nguyen, Nhat-Tuong Do-Tran, Phuc Pham Huy Thien, Minh-Hung An, Tuan-Ngoc Nguyen, Loi Nguyen Hoang, Vinh Dinh Nguyen, Quang-Vinh Dinh: **Comprehensive Visual Features and Pseudo Labeling for Robust Natural Language-based Vehicle Retrieval.** CVPR Workshops 2023: 5409-5418

2022

[j10]      Vinh Quang Dinh, Phuc Hong Nguyen, Vinh Dinh Nguyen: **Feature Engineering and Deep Learning for Stereo Matching Under Adverse Driving Conditions.** IEEE Trans. Intell. Transp. Syst. 23(7): 7855-7865 (2022)

[j9]      Hyung-Joon Jeon, Vinh Dinh Nguyen, Tin Trung Duong, Jae Wook Jeon: **A Deep Learning Framework for Robust and Real-Time Taillight Detection Under Various Road Conditions.** IEEE Trans. Intell. Transp. Syst. 23(11): 20061-20072 (2022)

ion based pixel and LBP and analysis, hand-
tors, and classification applications

to assign features. The VZMR8, is a prede-
ing set and in texture.
which is for
the free
is used to
accuracy
de LBP,
curvature
ases with



How to Read a Research Paper

Step 3:

Read the abstract of the paper and answer the following questions?

1. What methods or approaches were used in the research?
2. What are the most important findings or results of the study?
3. Which techniques that you known/or unknown?
4. What conclusions or implications are drawn from the findings?
5. What is the overall purpose or goal of the research?



Abstract—The local binary pattern (LBP) and its variants have been widely investigated in many image processing and computer vision applications due to their robust ability to capture local image structures and their computational simplicity. The existing LBPs extract local structure information by establishing a relationship between the central pixel and its adjacent pixels. However, most LBPs miss the relationship among all of the pixels in the local region. Therefore, this paper proposes a novel model to establish this relationship by introducing a support LBP. The proposed model improves the performance of the existing LBP methods and results in lower sensitivity to illumination changes and radiometric variations. Moreover, the proposed model has been successfully investigated in two applications: disparity map generation and texture classification. For disparity map generation, the proposed model reduces the root mean square (RMS) error by 23.6% (in Baby1 dataset, Middlebury), and 16.58% (in Aloe dataset, Middlebury) as compared with the standard LBP under radiometric variation conditions. Moreover, the proposed model reduces the RMS by 28.11% as compared with the standard LBP under the Gaussian noise condition in the ESATS dataset. For texture classification applications, the proposed model improves the classification results from 96.26% to 98.13% on the Outtext database, from 88.03% to 91.41% on the Xu database, and from 94.00% to 96.67% on the KTH-TIPS database as compared with the completed LBP.

Decision



How to Read a Research Paper

Step 4:

Read the conclusion of the paper and answer the following questions?

1. What are the main findings and results presented in the conclusion?
2. How do the findings answer the research question or address the research objectives?
3. Are there any unexpected or surprising results discussed in the conclusion?
4. Do the conclusions align with the research hypothesis or initial goals?
5. Are there any limitations or weaknesses of the study mentioned in the conclusion?
6. What are the practical implications of the findings?
7. Are there any recommendations or suggestions for future research provided?



V. CONCLUSION

This paper analyzed LBP from the viewpoint of the local structure in order to investigate the feasibility and effectiveness of the support binary pattern for various existing binary patterns and applications. The support binary pattern successfully establishes the relationship of a pixel from various directions in the local region. Robust experiments on two common applications, disparity map generation and texture classification, demonstrate that the proposed model improves the performance of current local pattern methods. The main contributions of this paper include the following.

- 1) Proposal of a new model to establish the relationships among all of the pixels in the local region (support local pattern).
- 2) Successful application of the proposed model to disparity map generation and texture classification to improve their performances in the case of radiometric variations and Gaussian noise.



How to Read a Research Paper

Step 4:

Read the conclusion of the paper and answer the following questions?

1. What are the main findings and results presented in the conclusion?
2. How do the findings answer the research question or address the research objectives?
3. Are there any unexpected or surprising results discussed in the conclusion?
4. Do the conclusions align with the research hypothesis or initial goals?
5. Are there any limitations or weaknesses of the study mentioned in the conclusion?
6. What are the practical implications of the findings?
7. Are there any recommendations or suggestions for future research provided?

Conclusion

- 3) Easy application of the proposed model to other local patterns to improve performance, while preserving the simplicity of the original methods.

Support local pattern is a general model. Therefore, it should be slightly redesigned to satisfy the main requirements of a specific application, such as a rotation invariant of texture classification or robustness to noise for disparity map generation. The effect of the proposed model for other local patterns on various applications, including face detection, face recognition, and human detection, will be investigated in the near future.

Decision



How to Read a Research Paper

Step 5:

Read the introduction of the paper
and answer the following questions?

1. What is the overall purpose or goal of the research?
2. What is the background or context of the research?
3. What are previous related research that has been done?
4. What are the citation of each previous work (extremely important for you)
5. Is there a review of related work or literature in the introduction?
6. Are there any notable trends or debates in the field mentioned?
7. What is the theoretical framework or approach used in the research?
8. What is the scope and focus of the research?
9. Does the introduction engage your interest and make you want to continue reading the paper?

Abstract—The local binary pattern (LBP) and its variants have been widely investigated in many image processing and computer vision applications due to their robust ability to capture local image structures and their computational simplicity. The existing LBPs extract local structure information by establishing a relationship between the central pixel and its adjacent pixels. However, most LBPs miss the relationship among all of the pixels in the local region. Therefore, this paper proposes a novel model to establish this relationship by introducing a support LBP. The proposed model improves the performance of the existing LBP methods and results in lower sensitivity to illumination changes and radiometric variations. Moreover, the proposed model has been successfully investigated in two applications: disparity map generation and texture classification. For disparity map generation, the proposed model reduces the root mean square (RMS) error by 23.6% (in Baby1 dataset, Middlebury), and 16.58% (in Aloc dataset, Middlebury) as compared with the standard LBP under radiometric variation conditions. Moreover, the proposed model reduces the RMS by 28.11% as compared with the standard LBP under the Gaussian noise condition in the ESATS dataset. For texture classification applications, the proposed model improves the classification results from 96.26% to 98.13% on the Outtext database, from 88.03% to 91.41% on the Xu database, and from 94.00% to 96.67% on the KTH-TIPS database as compared with the completed LBP.

Index Terms—Completed local binary pattern (CLBP), local binary pattern (LBP), local derivative pattern (LDP), support local pattern.

I. INTRODUCTION

IN RECENT years, the local binary pattern (LBP) [1] has been investigated in many applications, such as texture classification, face detection, face recognition, medical image analysis, gender classification, human detection, and object detection [2], [3], due to its robustness to illumination changes and its simplicity of computation. LBP is a nonparametric

Manuscript received September 24, 2012; revised January 02, 2013; accepted February 08, 2013. Date of publication March 27, 2013; date of current version February 4, 2014. This work was supported in part by the Ministry of Knowledge Economy, Korea, under Information Technology Research Center NIPA-2012-(H0301-12-3001) and by PRCP through the National Research Foundation of Korea funded by MEST under Grant 2012-0005861. This paper was recommended by Associate Editor A. Vetro.

V. D. Nguyen, D. D. Nguyen, V. Q. Dinh, and J. W. Jeon are with the School of Information and Communication Engineering, Sungkyunkwan University, Suwon 440-746, Korea (e-mail: vinhdn@skku.edu; nddung3@skku.edu; dqvnh@skku.edu; jwjeon@yurim.skku.ac.kr).

T. T. Nguyen is with Image Mining Group, Institut Pasteur Korea, Seongnam 463-400, Korea (e-mail: attthuy@ip-korea.org).

Color versions of one or more of the figures in this paper are available online at <http://ieeexplore.ieee.org>.
Digital Object Identifier 10.1109/TCSVT.2013.2254898

method that extracts the structure of the local region based on the differences in intensity between the central pixel and its adjacent pixels. Generally, we can classify the LBP and its variants into five main categories: multiscale analysis, handling rotation, handling color, complementary descriptors, and feature selection and learning, as in [3]. Texture classification has been one of the most popular and successful applications that has used LBP during the past few years.

Texture classification is an application that is used to assign an unknown texture to the set of predefined textures. The assignment process can be based on the training of VZMR8, VZ_Joint [4], [5], or free training [6]. VZMR8 uses a predefined texton library that is constructed from a training set and a set of filter banks in order to classify the unknown texture. A texture dataset is divided into two sets, one of which is for a sample model and one that is used for testing during the free training. In conventional LBP [1], a uniform pattern is used to extract the texture information. It achieves very good accuracy in texture classification by combining multiple-scale LBPs, which work well in the case of straight edges or low curvature edges. However, this method is not successful in cases with complicated shapes such as crossing boundaries or corners, as shown in [7]. The dominant LBP [7] is proposed in order to solve this issue by considering the most frequently occurring patterns in texture images. An analysis in [8] showed that the LBP does not retain global spatial information, so a new LBP with global matching is proposed using the LBP variance. To find another component to supplement LBP, Zhang *et al.* [9] introduced a monogenic-LBP by combining LBP and monogenic signal theory. Recently, Guo *et al.* [6] demonstrated that LBP with a sign operator captures more discriminative information than LBP with a magnitude operator. A completed local binary pattern (CLBP) is proposed based on these operators and the center pixel value. Motivated by the order derivative of the LBP, the local derivative pattern (LDP) [10] is proposed to capture more detailed information by introducing a high-order derivative. However, if the order is greater than three, LDP is more sensitive to noise than LBP. The local ternary pattern (LTP) [11] is proposed in order to decrease noise dependence, especially near the uniform region. LTP provides three values for encoding $[-1, 0, 1]$, with the help of a predefined threshold, instead of the two-value encoding $[0, 1]$ used in LBP.

The greatest advantage of LBP is its robustness with respect to illumination change. Many stereo methods have been



How to Read a Research Paper

Step 6:

Read the Experimental Results section of the paper and answer the following questions?

1. What are the key findings or results presented in the experimental results section?
2. Do the results address the research question or hypothesis posed in the introduction?
3. Are there any unexpected or surprising results discussed in the section?
4. Are there any statistical analyses or tests mentioned, and if so, what were the results?
5. Do the results support or contradict the prior literature discussed in the introduction?
6. Are there any figures, tables, or visuals, and do they enhance your understanding of the results?
7. Which existing methods they mentioned for comparison?
8. Which datasets they used for evaluation?
9. Which conditions they conducted for testing?

texture classification by abandoning the microstructure. Although the local structure information is discarded, LBC obtains the same performance as LBP in rotation-invariant cases. In addition, a completed local count binary (CLBC) is introduced based on LBC to compete with CLBP in [26]. LBC (or LBP) is sensitive to random noise and quantization noise

IV. EXPERIMENTAL RESULTS

To assess the strength of the proposed method, we conducted robust experiments on two applications: disparity map generation and texture classification. The publicly available Middlebury [27] image dataset and the EISATS [28] synthetic vehicle sequences are used to evaluate the effectiveness of the

NGUYEN *et al.*: SUPPORT LOCAL PATTERN AND ITS APPLICATION TO DISPARITY IMPROVEMENT AND TEXTURE CLASSIFICATION

271

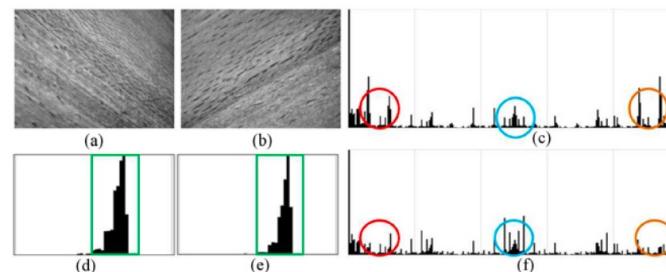


Fig. 9. (a) and (b) Two texture images. (c) and (d) SLBP_TC histograms of (a) and (b), respectively. (e) and (f) LBP histograms of (a) and (b), respectively.

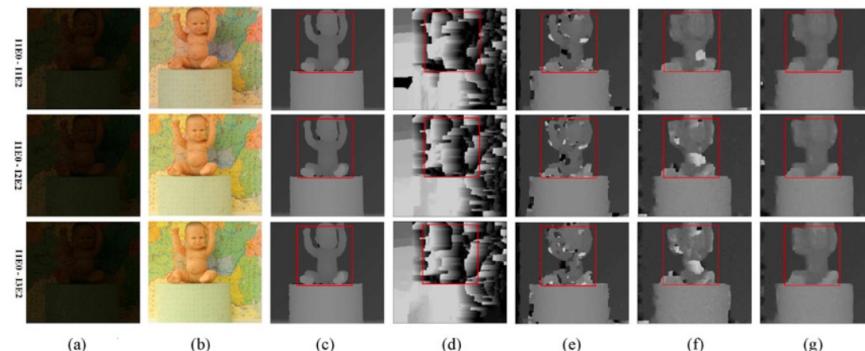


Fig. 10. Result of various stereo methods on Baby1 image pairs under various illuminations and exposures. (a) Left image. (b) Right image. (c) Gr truth. (d) AD. (e) ANCC. (f) LBP. (g) SLBP.

Decision



How to Read a Research Paper

Step 6:

Read the Experimental Results section of the paper and answer the following questions?

1. What are the key findings or results presented in the experimental results section?
2. Do the results address the research question or hypothesis posed in the introduction?
3. Are there any unexpected or surprising results discussed in the section?
4. Are there any statistical analyses or tests mentioned, and if so, what were the results?
5. Do the results support or contradict the prior literature discussed in the introduction?
6. Are there any figures, tables, or visuals, and do they enhance your understanding of the results?
7. Which existing methods they mentioned for comparision?
8. Which datasets they used for evaluation?
9. Which conditions they conducted for testing?

CLASSIFICATION RATE (%) ON TC10 AND TC12 USING DIFFERENT SCHEMES (OUTEXT DATASET)

	$(N, R)=(8,1)$			$(N, R)=(16,2)$			$(N, R)=(24,3)$					
	TC10		Average	TC10		Average	TC10		Average			
	<i>t</i>	<i>h</i>		<i>t</i>	<i>h</i>		<i>t</i>	<i>h</i>				
LTP	76.06	62.56	63.42	67.34	96.11	85.2	85.87	89.06	98.64	92.59	91.52	94.25
VAR(<i>P, R</i>)	90	62.93	64.35	72.42	86.71	63.47	67.26	72.48	81.66	58.98	64.18	68.80
LBP(<i>riu2, P, R</i>)/VAR(<i>P, R</i>)	96.56	79.31	78.08	84.65	97.84	85.76	85.54	89.38	98.15	87.13	87.08	90.79
M-LBP	81.21	78.85	77.6	79.22	83.55	80.1	79.35	81.00	85.56	84.32	83.67	85.41
CLBP	96.56	90.3	92.29	93.05	98.72	93.54	93.91	95.39	98.93	95.32	94.53	96.26
SCLBP	95.45	89.45	92.88	92.59	98.05	92.77	94.21	95.01	98.85	95.25	94.45	96.18
CLBC	97.16	89.79	92.92	93.29	98.54	93.26	94.07	95.29	98.78	94.00	93.24	95.67
SCLBP_TC (<i>t</i> = 0)	97.25	89.75	92.93	93.31	98.45	93.28	93.98	95.24	99.05	93.95	93.27	95.42
SCLBP_TC (<i>t</i> = 1)	97.45	90.25	93.02	93.57	99.68	94.25	94.75	95.89	99.25	95.77	99.45	96.82
SCLBP_TC (<i>t</i> = 3)	98.25	92.45	94.25	94.98	99.36	95.05	96.47	96.96	99.45	96.68	98.25	98.13
SCLBP_TC (<i>t</i> = 5)	96.45	89.25	92.15	92.62	97.89	94.02	93.25	93.05	98.26	94.86	97.22	96.78

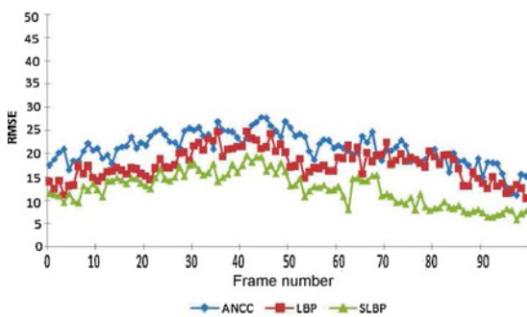


Fig. 14. RMS error of various stereo methods using the synthetic sequence with Gaussian noise.



Decision



How to Read a Research Paper

Step 6:

Read the Experimental Results section of the paper and answer the following question?

1. What are the key findings or results presented in the experimental results section?
2. Do the results address the research question or hypothesis posed in the introduction?
3. Are there any unexpected or surprising results discussed in the section?
4. Are there any statistical analyses or tests mentioned, and if so, what were the results?
5. Do the results support or contradict the prior literature discussed in the introduction?
6. Are there any figures, tables, or visuals, and do they enhance your understanding of the results?
7. Which existing methods they mentioned for comparison?
8. Which datasets they used for evaluation?
9. Which conditions they conducted for testing?

TABLE III

CLASSIFICATION RATE (%) ON XU DATASET USING DIFFERENT SCHEMES

T	(N, R)=(8,1)					(N, R)=(16,2)					(N, R)=(24,3)				
	20	15	10	5	Average	20	15	10	5	Average	20	15	10	5	Average
LTP	51.40	50.08	45.06	37.70	46.06	77.45	75.66	74.28	70.88	74.57	83.25	80.58	79.46	75.55	79.71
M-LBP	83.55	81.46	79.42	69.15	78.39	85.56	82.23	79.47	70.55	79.45	87.43	85.66	84.05	82.78	84.98
CLBP	86.80	82.40	78.93	71.20	78.83	87.00	85.02	80.53	73.60	81.54	90.25	88.59	87.34	85.94	88.03
SCLBP	86.25	82.21	77.68	70.05	79.05	86.55	84.33	79.21	72.11	80.55	88.75	87.56	86.59	85.02	86.98
CLBC	87.25	83.11	79.43	72.66	80.61	87.69	86.98	82.46	74.55	82.92	91.25	89.66	87.55	86.18	88.66
SCLBP_TC ($t = 0$)	87.28	83.45	79.55	73.00	80.82	87.25	87.05	82.59	75.04	82.98	92.02	89.05	88.25	85.59	88.73
SCLBP_TC($t = 1$)	88.35	83.88	81.79	73.03	81.76	87.99	86.24	82.68	74.47	83.1	93.97	92.25	91.48	87.94	91.41
SCLBP_TC ($t = 3$)	87.55	82.58	80.24	71.25	80.41	86.59	86.25	81.97	74.48	83.1	82.45	93.05	90.45	86.02	88.89
SCLBP_TC ($t = 5$)	86.16	82.09	79.98	70.06	79.92	85.67	84.86	80.61	73.39	81.23	92.55	89.78	89.25	85.24	89.21

TABLE IV

CLASSIFICATION RATE (%) ON KTH-TIPS DATASET USING DIFFERENT SCHEMES

T	(N, R)=(8,1)					(N, R)=(16,2)					(N, R)=(24,3)				
	30	20	10	5	Average	30	20	10	5	Average	30	20	10	5	Average
LTP	72.06	66.8	60.73	54.44	63.50	85.33	81.64	77.56	75.23	79.94	90.65	89.24	87.63	84.33	87.96
M-LBP	88.25	87.18	80.27	75.32	82.75	92.44	90.55	84.88	75.46	85.83	94.56	92.35	88.26	85.88	90.26
CLBP	91.91	91.59	83.97	77.46	86.23	96.32	92.41	84.85	78.45	88.01	98.35	97.64	91.55	88.48	94.00
SCLBP	90.84	89.98	81.57	77.02	84.85	96.01	91.23	83.33	77.98	87.14	96.55	95.68	89.34	87.11	92.17
CLBC	92.08	92.49	85.25	78.53	87.09	96.66	93.54	86.25	79.04	88.87	98.25	98.33	92.00	89.45	94.51
SCLBP_TC ($t = 0$)	91.86	92.55	85.22	78.09	86.93	96.02	92.98	87.03	78.69	88.68	97.89	98.25	92.25	88.95	94.34
SCLBP_TC($t = 1$)	94.05	92.88	86.11	79.03	88.02	97.55	93.88	87.06	79.52	89.50	99.25	99.24	96.28	91.89	96.67
SCLBP_TC ($t = 3$)	93.68	91.56	82.98	78.25	86.62	96.14	92.63	86.24	78.36	88.34	98.36	97.85	95.33	90.64	95.55
SCLBP_TC ($t = 5$)	91.22	90.56	83.66	77.96	85.85	95.68	92.09	85.46	75.59	87.21	97.25	98.05	94.64	90.29	95.06

Decision



How to Read a Research Paper

Step 7:

Read the Proposed Method section of the paper and answer the following questions?

1. What is the research problem or objective?
2. What is the overall approach or framework used in the method?
3. What data preprocessing or cleaning steps are involved?
4. What specific techniques or algorithms are applied?
5. Are there any assumptions made in the method?
6. How are the parameters and hyperparameters chosen or tuned?
7. How does the proposed method compare to existing methods?
8. How reproducible is the method?

II. LBP AND THE PROPOSED MODEL

In this section, we briefly review common local patterns such as the LBP and the CLBP and their disadvantages. To address the limitations of these patterns, the SLBP model is then introduced.

A. LBP

LBP [1] is a nonparametric method that captures the local structures of images by comparing each pixel with eight neighbor pixels ($N = 8$) in a 3×3 window ($R = 1$). Given a center pixel $z_c = (x, y)$ in the image, the LBP code is generated as

$$LBP_{N,R}(z_c) = \sum_{n=1}^N f(z_n, z_c)2^n \quad (1)$$

$$f(z_n, z_c) = \begin{cases} 1, & I(z_n) \geq I(z_c) \\ 0, & I(z_n) < I(z_c) \end{cases}$$

where $I(z_c)$ and $I(z_n)$ are the gray values of the central pixel and the n th neighbor pixel, respectively. R is the radius of the neighborhood. Moreover, N neighborhood pixels can be located outside of the image grids. Their gray values can be calculated using bilinear interpolation, and the coordinate of z_n is determined by

$$(x_n, y_n) = \left[x_c + R \cos\left(\frac{2\pi n}{N}\right), y_c - R \sin\left(\frac{2\pi n}{N}\right) \right]. \quad (2)$$

Another type of LBP is the uniform pattern. A pattern is considered uniform if the number of bitwise transitions between

C. General Model of SLBP

Analyzing LBP from the view point of the local structures, we propose a supporting local pattern in order to establish a relationship among the neighborhood pixels, while preserving the simplicity of the original method. Given a local structure ($N = 8, R = 1$), the LBP code is a binary string that is established by measuring the magnitude value between a center pixel and its neighborhood pixels. An intuitive question has been raised as to whether a binary string could be established to every pixel in the local region. This means that every pixel might act as a center pixel in the local region.

Fig. 2(c) shows the results of the binary strings that are generated from every pixel in the local region from Fig. 2(a). Thus, the discriminative information can be obtained by considering each pixel in the local region as the center pixel. The structure of the local region (original microscopic pattern configuration) is not destroyed for two reasons: 1) Every pixel position is not moved in the local region; 2) From the view of each pixel position, a binary string is established by considering its intensity value relative to the intensity value of other neighborhoods. That is exactly what LBP does to establish a binary string.

We do not consider the rotation invariant in the general SLBP model, because SLBP should be adaptively applied to specific applications based on the main characteristic of the application. For example, the disparity map generation does not require a rotation invariant, while the rotation invariant is an important property for texture classification. A simple example has been conducted to demonstrate the previous

Decision



How to Read a Research Paper

Step 7:

Read the Proposed Method section of the paper and answer the following questions?

1. What is the research problem or objective?
2. What is the overall approach or framework used in the method?
3. What data preprocessing or cleaning steps are involved?
4. What specific techniques or algorithms are applied?
5. Are there any assumptions made in the method?
6. How are the parameters and hyperparameters chosen or tuned?
7. How does the proposed method compare to existing methods?
8. How reproducible is the method?

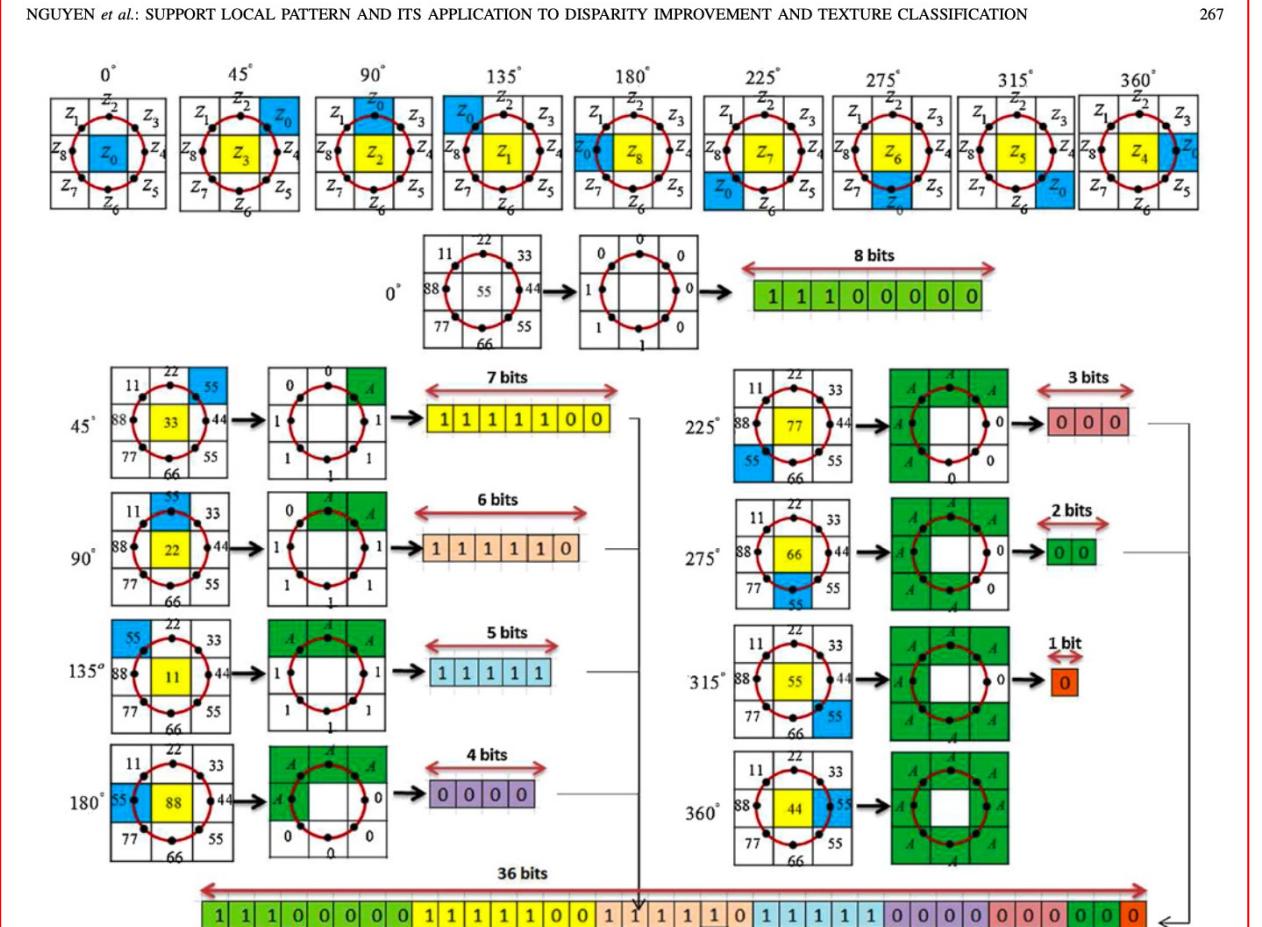


Fig. 4. Proposed data cost model (SLBP) for disparity map generation. A is denoted as a position of the pixel that has already established the relationship to the center pixel.

Decision

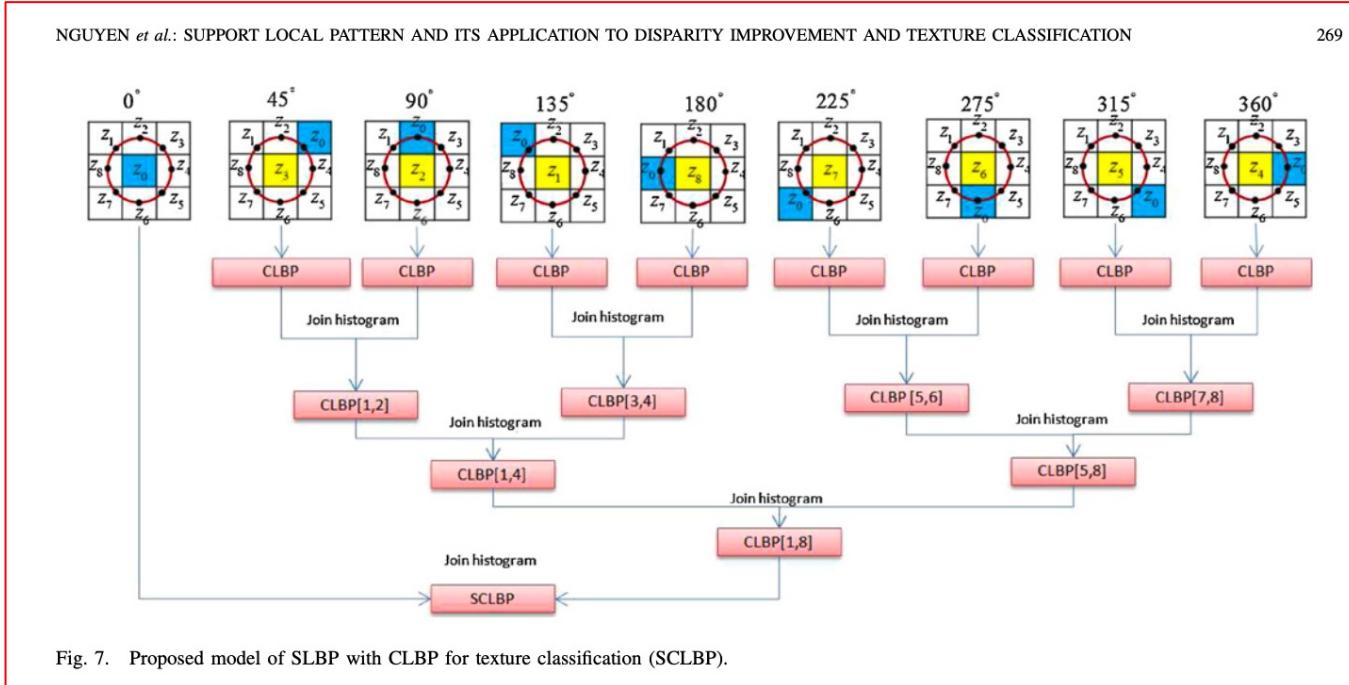


How to Read a Research Paper

Step 7:

Read the Proposed Method section of the paper and answer the following questions?

1. What is the research problem or objective?
2. What is the overall approach or framework used in the method?
3. What data preprocessing or cleaning steps are involved?
4. What specific techniques or algorithms are applied?
5. Are there any assumptions made in the method?
6. How are the parameters and hyperparameters chosen or tuned?
7. How does the proposed method compare to existing methods?
8. How reproducible is the method?



Decision



How to Read a Research Paper

Step 8:

Read the Related Work section of the paper and answer the following question?

1. What is the purpose of the "Related Work" section?
2. What are the key research topics or areas covered in the related work?
3. What are the most recent and relevant studies in the field?
4. How does the paper's research question or problem statement relate to the prior literature?
5. Are there any gaps or limitations in the existing research that the paper aims to address?
6. What are the main findings or insights from the related work?
7. How does the current research build upon or extend the existing literature?

TABLE I
COMPARISON OF VARIOUS STEREO METHODS FOR DISPARITY MAP GENERATION AND LBP METHODS FOR TEXTURE CLASSIFICATION AND FACE DETECTION

Author	Algorithm	Descriptions	Type	Other
				Texture classification
Guo <i>et al.</i> [6]	Completed LBP	Incorporation with different sign and magnitude forms of local pixels.	Complementary descriptors	Use histogram combination and minimize the Chi-square distance with free training.
Liao <i>et al.</i> [7]	Dominant LBP	Combination of local information (most frequently occurring pattern) and global information (Gabor feature).	Feature selection and learning	Less sensitive to noise and histogram equalization. A support vector machine (SVM) is used.
Guo <i>et al.</i> [8]	LBP variance	Integration rotation-variant LBP histogram and global matching.	Handling rotation	Use histogram combination and minimize the chi-square distance with free training.
Zhang <i>et al.</i> [10]	Monogenic-LBP	Supplement LBP with local phase and local surface measure with Riesz transform.	Handling rotation	3-D normalized histogram and chi-square distance.
Guo <i>et al.</i> [22]	Adaptive LBP	Integration LBP with direction statistical features: mean, standard deviation, and adaptive coefficients.	Handling rotation	Chi-square distance is used to measure the histogram similarity.
Hafiane <i>et al.</i> [23]	Mean Binary Pattern	The mean value of local region is used as a threshold value.	Threshold and encoding	Capture contrast information of the local region and reduce the affect of scale changes by decomposing the images into smaller frequency ranges.
Yang and Wang [24]	LBP with Hamming distance	Integrate Hamming distance to LBP to reduce the error.	Feature selection and learning	Combine nonuniform pattern into uniform pattern by minimizing the Hamming distance.
Disparity map generation				
Kanade [12]	SAD	Measure the absolute different intensity between the left and right pixels.	Local matching	Simplest similarity measurement. Sensitive to noise.
Bolles <i>et al.</i> [13]	NCC	Find the disparity that reduce the associated error and increase the similarity.	Local matching	More complex operation than SAD. Sensitive to noise.
Zabih and Woodfill [14]	Census	Nonparametric local transform, reducing the effect of variation due to camera.	Local matching	Improved the matching result near object boundaries but still sensitive to brightness difference.
Ohta and Kanade [15]	DP	Horizontal and vertical matching with intrascanline and interscanline.	Global matching	3-D search space for long connected edges and 2-D for isolated edges. Sensitive to noise.
Boykov <i>et al.</i> [17]	Graphcut	Integration graph cut with two algorithms, α - β swap and α -expansion to compute the local minimum.	Global matching	Assume two pixels in left and right images should have the same or similar intensity. Less sensitive to noise.
Felzenszwalb and Huttenlocher [19]	BP	Maximum product algorithm is used by transmitting a message in four directions. Multi-scale algorithm is used to reduce the processing time.	Global matching	Distance transform is used to minimize message cost and compute message in linear time. Less sensitive to noise.
Hirschmuller [20]	SGM-MI	Integration global methods with local stereo methods for pixel-wise matching.	Global matching	Mutual information is used for estimating matching cost. Robust to radiometric noise.
Heo <i>et al.</i> [21]	Adaptive NCC	Integration adaptive normal cross correlation with color formation model.	Global matching	Bilateral filter cost is substituted for window mean value cost. Inensitive to radiometric variation but still sensitive to multiple illumination conditions.

Decision



Outline

- **Introduction to Scientific Research Paper**
- **What is Research Paper Structure**
- **How to find Research Paper**
- **How to read Research Paper**
- **How to summary Research Paper**
- **Assignment**

Summary Research Paper

1. Begin your summary with a brief introduction that includes the paper's title, authors, and publication information.
2. In a few sentences, introduce the research question or problem the paper addresses.
3. Provide a concise overview of the methodology or approach used in the study, including the data sources, data collection and analysis methods, and any statistical techniques.
4. Highlight the primary findings or results of the research. Use clear and straightforward language to communicate these findings. If the paper includes figures, tables, or graphs, refer to them as needed.
5. Conclude your summary with a closing statement that provides an overall assessment of the paper, such as its significance, relevance, or potential for future research.

Outline

- **Introduction to Scientific Research Paper**
- **What is Research Paper Structure**
- **How to find Research Paper**
- **How to read Research Paper**
- **How to summary Research Paper**
- **Assignment**

Assignment 1

- Requirement:
 - Find 1 scientific research paper based on research interest
 - Read and answer the questions for each sub-section in the paper as in the slides
 - Write an short summary in $\frac{1}{2}$ A4 page
- Submit to: aivnresearch@gmail.com
- Deadline: 12:00 18/11/2023
- Receiving Feedback: 1 week from TA Research Team of AIVN

