

Intelligence Augmentation through Generative AI & ChatGPT



INFORMATION TECHNOLOGY
UNIVERSITY OF THE PUNJAB

1 Week Hands-On Workshop
for Students and Researchers

August 7-10 2023

Day 1:
Introduction to Generative AI and ChatGPT

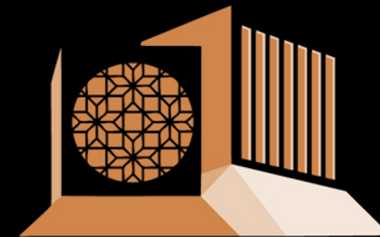
Day 2:
Prompt Engineering for ChatGPT

Day 3:
AI-Augmented Writing Training

Day 4:
Effective Use and Ethics of ChatGPT/ Generative AI

JUNAID QADIR

Professor of Computer Engineering
Department of Computer Science and Engineering



جامعة قطر
QATAR UNIVERSITY

Day 3

AI-Augmented Writing: *The Art of Writing in the AI Era*

You need to know about good writing so that you may prompt appropriately and so that you may judge the AI-writing.

The AI Era provides some new affordances but the basics of writing do not change so much of what we study is timeless.

Why are so many papers difficult to read?

You may think you just lack the technical sophistication to understand them.



But in fact, many papers are **poorly written**.

*What then are the characteristics of
well-written research works?*

Day 3

AI-Augmented Writing: *The Art of Writing in the AI Era*

JUNAID
QADIR

PART A

1. *Top-Down (Big Picture)*
2. *Flow (Connected)*
3. *Coherence (United)*
4. *Groundedness (Accuracy)*
5. *Empathy (Reader Focus)*
6. *Design (Consistency)*
7. *Style (Flair)*



jqadir@
qu.edu.qa



AI-Augmented Writing:

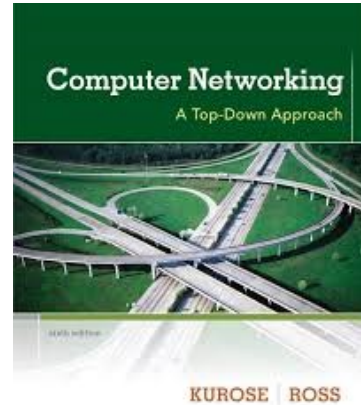
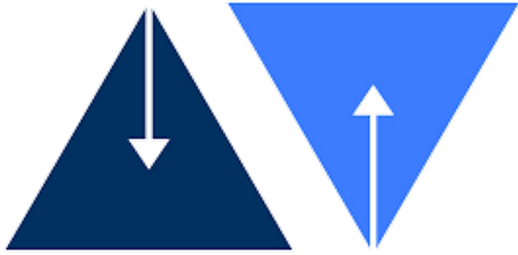
The Art of Writing in the AI Era

1

Top-Down

(Context, Context, Context)

Write top-down—context, context, context



Top-10 tips for writing a paper



Jim Kurose
Department of Computer Science
University of Massachusetts

- ❑ computer scientists (and most human beings) think this way!
- ❑ state broad themes/ideas first, then go into detail
 - ❖ context, context, context
- ❑ even when going into detail ... write top down!

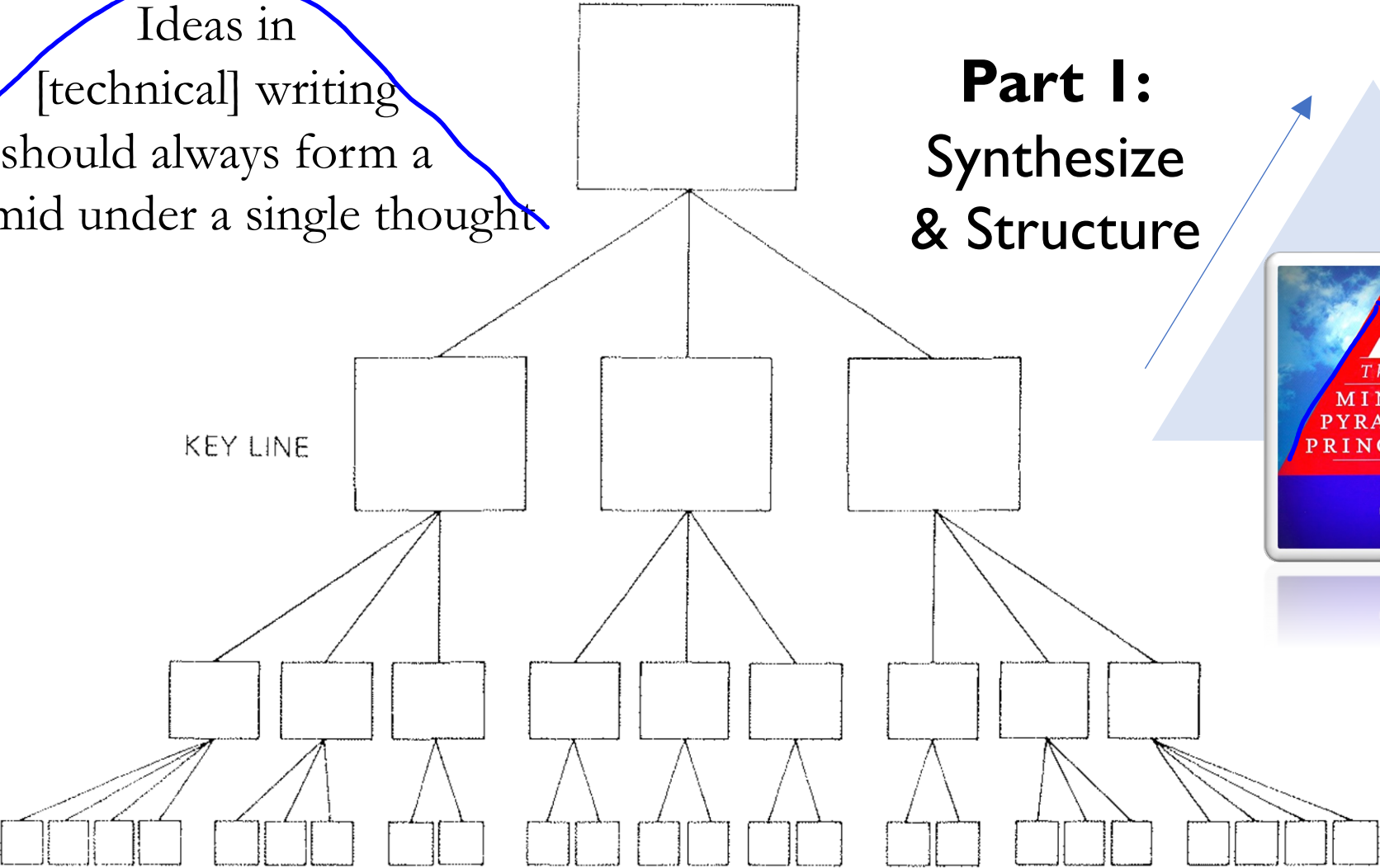
Tell them what they
want to know



- ✓ How is your work **important**?
- ✓ How is your work **novel**?
- ✓ How is your work **interesting**?
- ✓ Why should they care?
- ❑ ~~How was your work **challenging**?~~

How to provide the general context: **Abstraction**

Ideas in
[technical] writing
should always form a
pyramid under a single thought



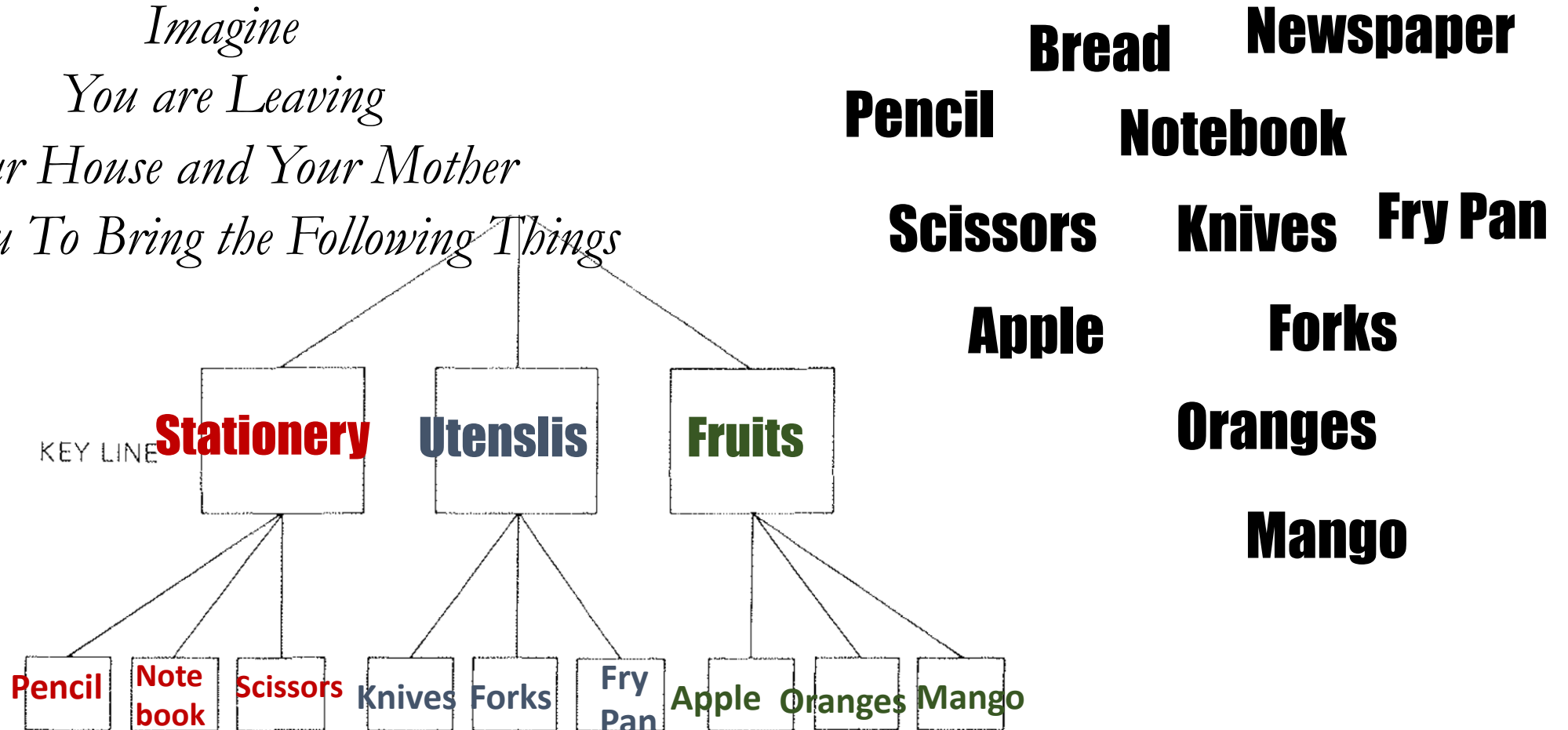
Part I:
Synthesize
& Structure

Part 2:
Communicate
Top-Down



Giving **Structure** to the Narrative

*Imagine
You are Leaving
Your House and Your Mother
Asks you To Bring the Following Things*

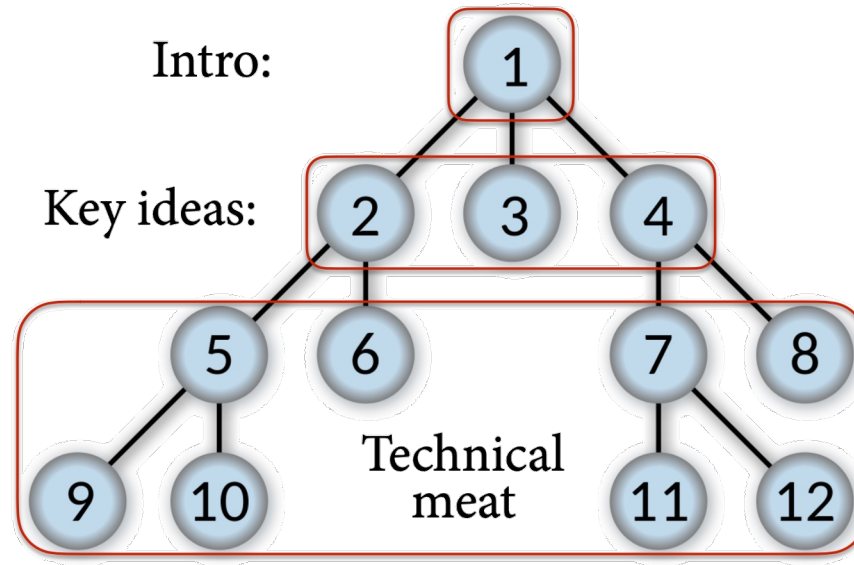


*The Magical Number Seven,
Plus Or Minus Two*

Pyramid Principle

big stuff first, and then details

The traditional narrative approach



Recommendation
*State and illustrate the **key ideas** before delving in the details*

The pyramid approach



Frequently observed mistakes

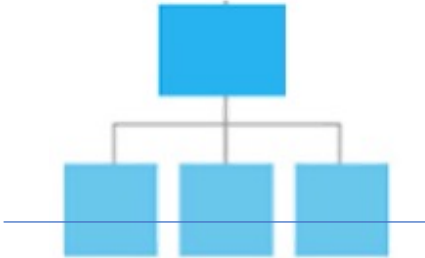
Laundry List of Items.

Related Work:
Author A did this.
Author B did this.
Author C did this.

Contributions:
We did this.
Then we did this.
And we did this.

*Describe how
the related work
relates to your
approach.*

*Describe how your
work extends the state
of the art and adds to
the body of knowledge*



*Uninformative captions/
canned section headings.*

Not at the same level
Not mutually exclusive
Not collectively exhaustive

Dazzling through Convolution/Maths:

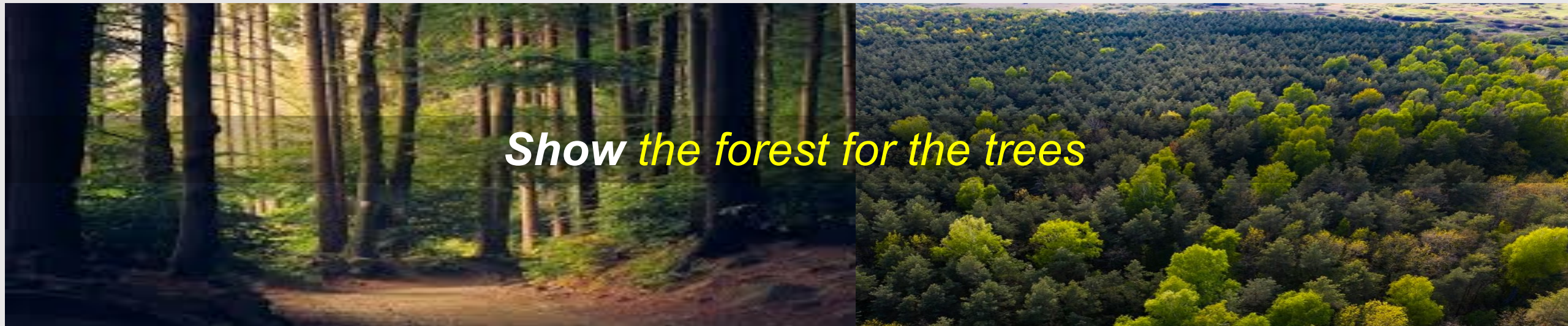
"If it is so simple, it cannot be sophisticated enough to be published."

"If It's easy to understand, then it cannot be profound."

"If it's so clear then it's easy to tell when the ideas are wrong."

Things To Do

***Show** the forest for the trees*

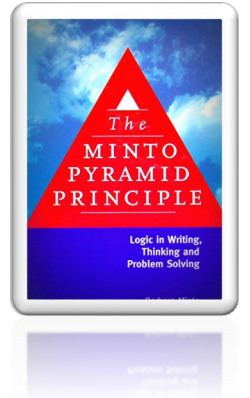
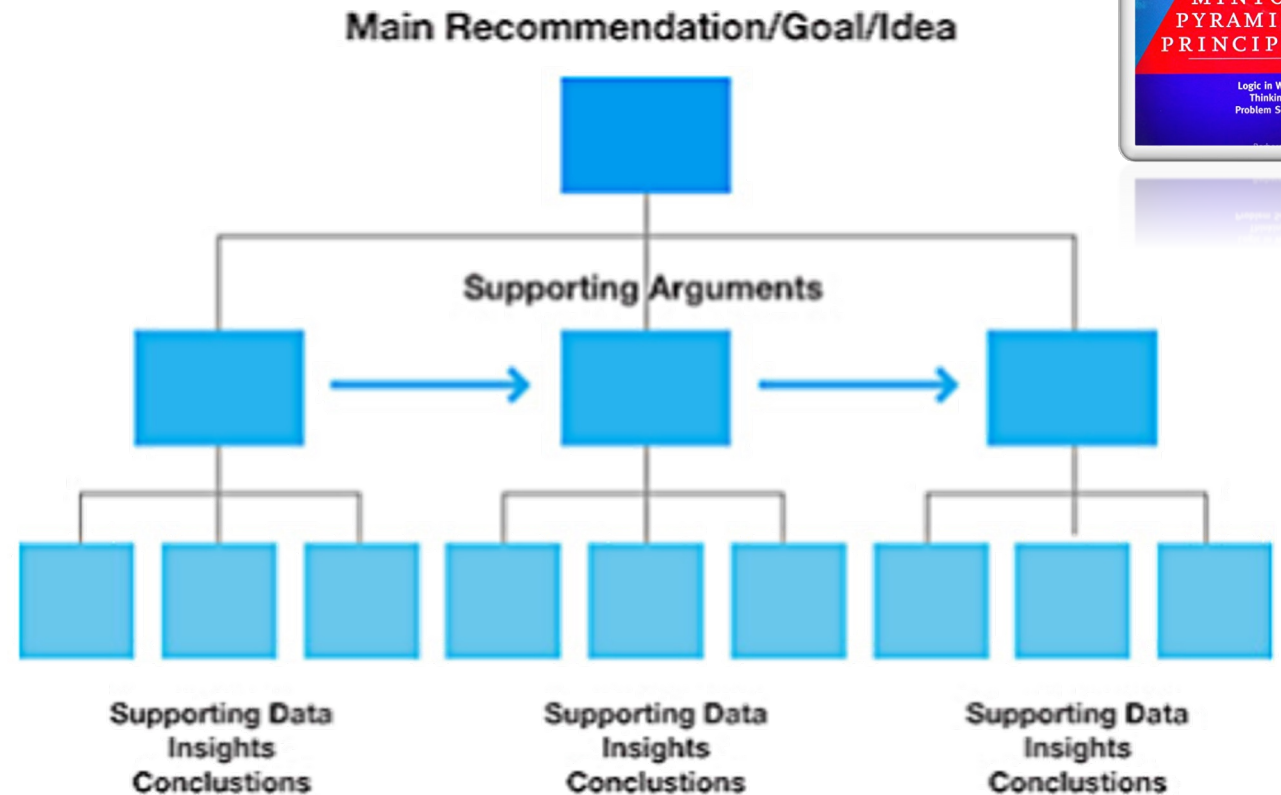


MECE (Mutually Exclusive Collectively Exhaustive)

ME: Distinctly Different



CE: Together, they make a complete whole



Always provide the context

Not just the technical details.

Talk of the work's importance, novelty, non-triviality, contributions.

Figure captions. Table captions.

Compare and contrast. What may be of obvious to you may not be obvious to others.

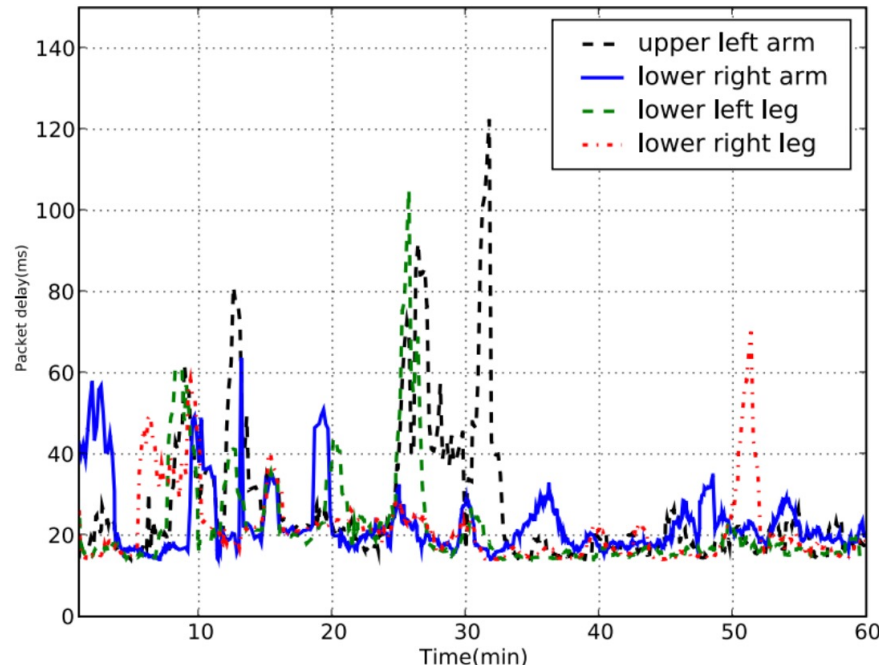
Not only a laundry list of "Related Work"

A description of how those works relate.

Show Relations—> Use Taxonomies.

MECE principle for Taxonomies.

Clearly state the take-home messages



Too much of a good thing can be bad.
Please ensure that your caption does not become a paragraph. No more than 3 (or max 4) lines!

Figure ■: Radio link quality variation across sensor nodes. *Measured ARQ packet delays are shown for four nodes in the 8-node lab test. Higher delays indicate lossy links. As the figure shows, there is significant variation in the link conditions for individual nodes.*

LLM Issues/ Examples





Make an outline for me for a paper on the topic “” that moves in a top-down Pyramid fashion



Suggest alternative titles for a journal paper currently having the following title, “”



I am writing a paper on metaverse and ethics. These are the references that I have. Do you have more references/citations I can use: ”

REFERENCES

- [1] L.-H. Lee, T. Braud, P. Zhou, L. Wang, D. Xu, Z. Lin, A. Kumar, C. Bermejo, and P. Hui, “All one needs to know about metaverse: A complete survey on technological singularity, virtual ecosystem, and research agenda,” arXiv preprint arXiv:2110.05352, 2021.
- [2] S. Greengard, “Virtual reality,” in MIT Press, 2019, p. e240.
- [3] J. Bailenson, “Experience on demand: What virtual reality is, how it works, and what it can do,” in WW Norton & Company, 2018.
- [4] L. Rosenberg, “The metaverse: From marketing to mind control,” Future of Marketing Magazine, Future of Marketing Institute, York University, 2022.

...

Check for your own paper and check how many references are valid references and how many are hallucinated?



AI-Augmented Writing:

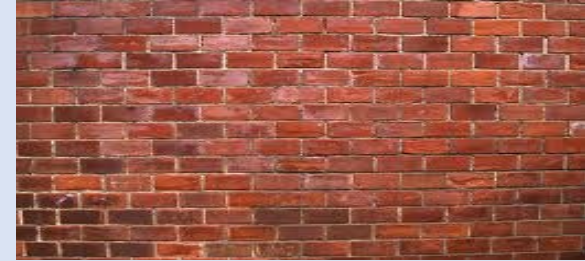
The Art of Writing in the AI Era

2

Flow

(Importance of Structure)

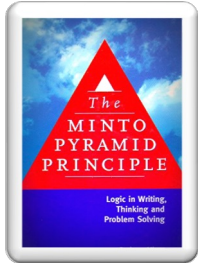
Flow



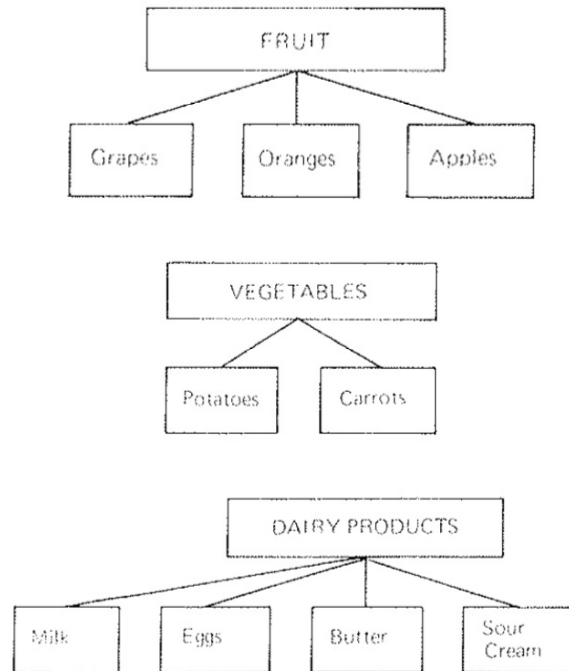
***The importance of
structure***

*It should be clear how each sentence and
paragraph relates to the adjacent ones*

The Magic Number 7 (+/-2 items) *[Round 2]*



Imagine again you are leaving your comfortable living room to buy a newspaper. *"I think I'll go out and get the paper,"* you say to your wife. *"Is there anything you want while I'm out?"*



*"Gosh, I have such a taste for **grapes**,"*

*"and maybe you ought to get some more **milk**."*

*"I know we are out of **eggs**."*

*"Let me see, yes, we do need **potatoes**. Yes."*

*"**Carrots** and maybe some **oranges**."*

*"**Butter**."*

*"**Apples**."*

*"And **sour cream**."*

"Is that all?"

"Yes dear, thank you."

*What will you remember
and bring back home?*



Flow at Multiple Levels



[Self-Similarity/Fractals]

We need to ensure flow at different levels.

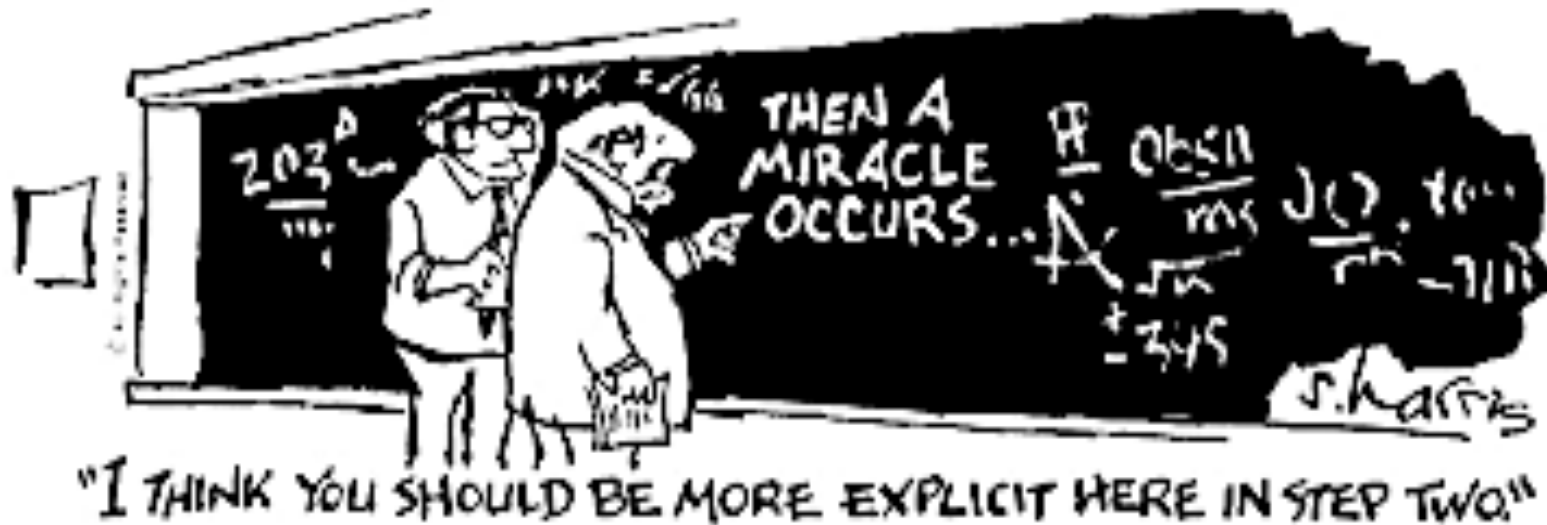
- Sections
- Subsections
- Paragraphs
- Sentences

Artificial Intelligence in Education: A Panoramic Review

▼ Introduction	▼ Market Players and Tools
Market Trends and opportunities	Students' Grading and Evaluation
Scope of the Survey	Students' Retention and Dropout
Related Surveys	Personalized Learning
Contributions	Students' Performance Prediction
▼ AI Applications in Education	Sentiment Analysis in Education
Students' Grading and Evaluation	Recommendation Systems in Education
Students' Retention and Dropout	Classroom Monitoring and Visual Analysis
Personalized Learning	Intelligent Tutoring Systems
Students' Performance Prediction	▼ Bibliometric Analysis
Sentiment Analysis in Education	Authors based Productivity Analysis
Recommendation Systems in Education	Institute and Country based Productivity Analysis
Classroom Monitoring and Visual Analysis	Knowledge Flow
Intelligent Tutoring Systems (ITS)	Relationships between Applications and Techniques
AI Applications in Education: Some Publication Statistics	▼ Discussion: Insights, Pitfalls, Future Research and Open Issues
▼ Techniques	► Insights
Supervised Learning	Limitations of AI in Education/Learning
Unsupervised Learning	► Future Research Directions and Open Issues
Reinforcement learning	Conclusions
AI Techniques in Education: Some Publication Statistics	References

Flow in Mathematics

Scientific writing is similar to mathematics in that a missing link can derail the work



Frequently observed mistakes

The need to avoid rambling.

Logical Flow—Non Sequiturs (does not follow)

"[Logic] is an introduction to all the sciences, and he who does not comprehend it is not ever to be trusted in his scholarship." —al-Ghazālī



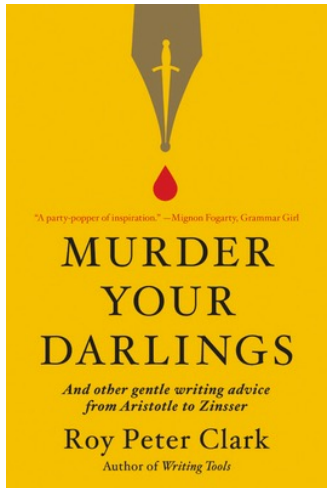
Socrates is a man.
All men are mortal.
Socrates was a good writer.

Things To Do

‘I’ve learned that scientific and technical material can be made accessible to the layman. It’s just a matter of putting one sentence after another. The “after,” however, is crucial. No where else must you work so hard to write sentences that form a linear sequence.’—William Zinnser

Working hard to develop flow

(and the importance of flow in technical writing)



The paper's organization does not have to how you did the work.

The paper's organization does not have to how the first draft was written.

*“To write well is to think clearly.
That’s why it’s so hard”*

Let's see some examples

Source:

HOW TO WRITE PAPERS
SO PEOPLE CAN READ THEM



Derek Dreyer
MPI for Software Systems

*PLMW@SPLASH 2019
Athens, Greece*



Exercise of improving flow

Security proofs of cryptographic protocols are crucial for the security of everyday electronic communication. However, these proofs tend to be complex and difficult to get right. The game-playing technique, originally proposed by Jones et al., follows a code-based approach where the security properties are formulated in terms of probabilistic programs, called games. This is a general design principle for cryptographic proofs to ease their management.

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CGI Model for Writing Intro/Abstracts

Context:

- Set the stage, motivate the general topic

Gap:

- Explain your specific problem and why existing work does not adequately solve it

Innovation:

- State what you've done that is new, and explain how it helps fill the gap

CGI Model for Writing Intro/Abstracts

Context Learning to write well is an essential part of becoming a successful researcher. **Unfortunately,**

Gap **many researchers find it very hard to write well because they do not know how to view their text from the perspective of the reader. In this talk,**

Innovation **we present a simple set of principles for good writing, based on an understanding of how readers process information.**

LLM Issues/ Examples





Edit the following abstract for conciseness, readability, and flow.



Edit the following and suggest alternative abstracts with better readability and flow.



Comment on the structure
of the following section
and suggest improvements.

Thank you!
Questions/ Discussion

Day 3

AI-Augmented Writing: *The Art of Writing in the AI Era*

JUNAID
QADIR



PART B

1. *Top-Down (Big Picture)*
2. *Flow (Connected)*
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4. *Groundedness (Accuracy)*
5. *Empathy (Reader Focus)*
6. *Design (Consistency)*
7. *Style (Flair)*

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qu.edu.qa



AI-Augmented Writing:

The Art of Writing in the AI Era

3

Coherence

(Thematic Unity)

Coherence

noun

1. the quality of being logical and consistent.

"this raises further questions on the coherence of state policy"

2. the quality of forming a unified whole.

"the group began to lose coherence and the artists took separate directions"

The importance of having thematic unity!

It should be clear how each sentence and paragraph relates to **the big picture**

*The concept of “**coherence**” is often used in conjunction with “**cohesion**” (which is related to the idea of “flow”)*

Coherence vs. Cohesion/Flow



Coherence means the connection of ideas at the idea level (the rhetorical issues).

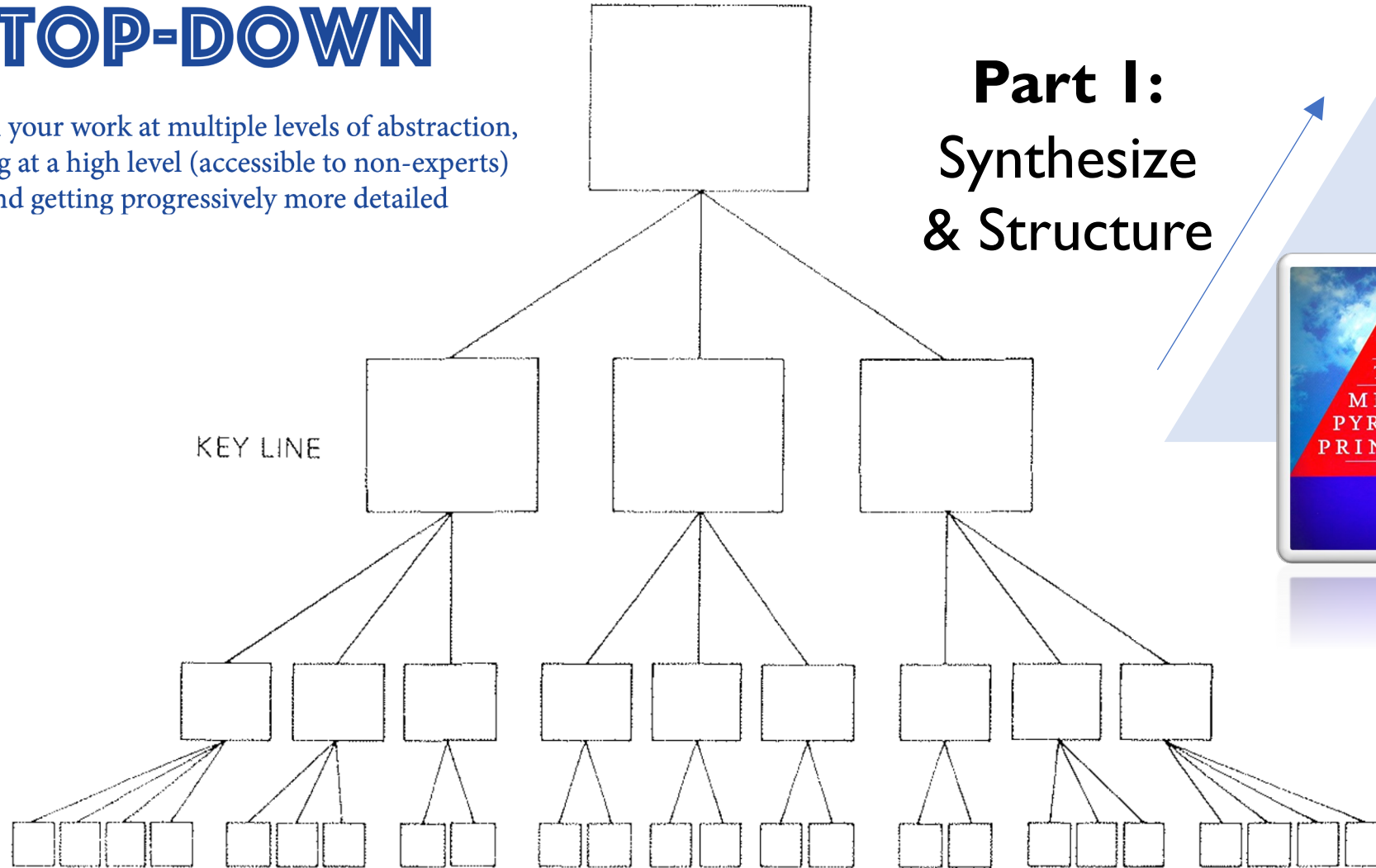
Cohesion/flow means the connection of ideas at the sentence level (the grammatical issues).

Coherence deals with developing and supporting your arguments, synthesizing and integrating concepts, organizing and clarifying ideas.

Developing a coherent narrative: **Abstraction**

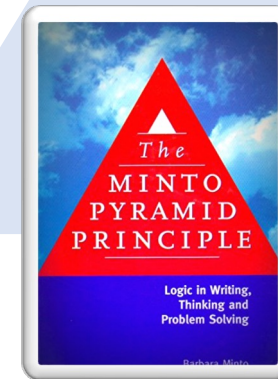
TOP-DOWN

Explain your work at multiple levels of abstraction, starting at a high level (accessible to non-experts) and getting progressively more detailed



Part I: Synthesize & Structure

Part 2: Communicate Top-Down



*Your goal: to convey a
useful and re-usable idea
(useful for the reader)*

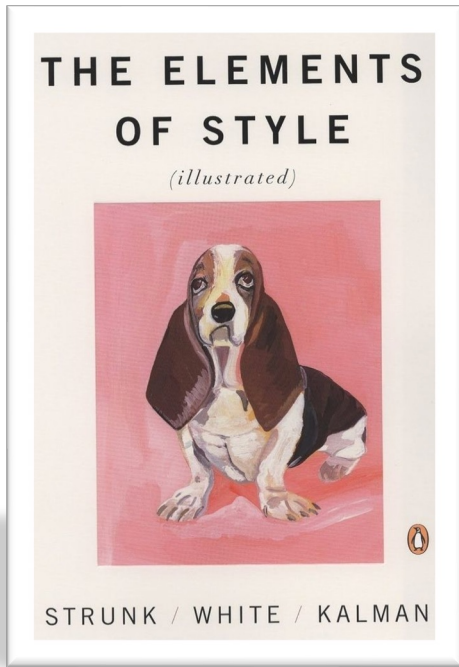
Fractal Coherence

(The need for coherence at multiple levels)



We need to ensure coherence at different levels.

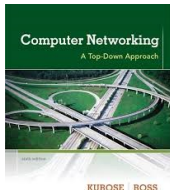
- Sentences (coherent with paragraph)
- Paragraphs (coherent with (sub-)section)
 - Subsections (coherent with section)
 - Sections (coherent with title)



5. Revise and rewrite.

Revising is part of writing. Few writers are so expert that they can produce what they are after on the first try. Quite often you will discover, on examining the completed work, that there are serious flaws in the arrangement of the material, calling for transpositions. When this is the case, a word processor can save you time and labor as you rearrange the manuscript. You can select material on your screen and move it to a more appropriate spot, or, if you cannot find the right spot, you can move the material to the end of the manuscript until you decide whether to delete it. Some writers find that working with a printed copy of the manuscript helps them to visualize the process of change; others prefer to revise entirely on screen. Above all, do not be afraid to experiment with what you have written

Top-10 tips for writing a paper



Jim Kurose
Department of Computer Science
University of Massachusetts

Give yourself time to reflect, write, review, refine

Give others a chance to provide feedback

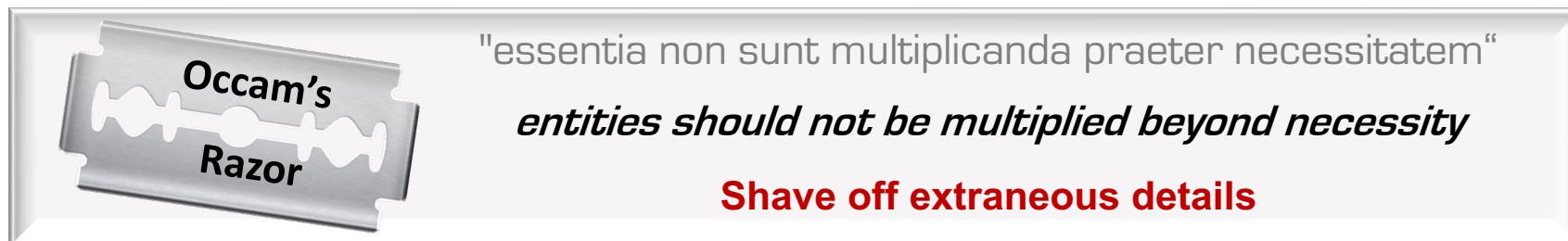
Starting three days before the deadline, while results are still being generated, is a non-starter

Frequently observed mistakes

Having irrelevant/extraneous details



*Don't introduce notation/ acronyms
that you will not later on use.*



On incoherent papers

SCIgen - An Automatic CS Paper Generator

[About](#) [Generate](#) [Examples](#) [Talks](#) [Code](#) [Donations](#)
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About

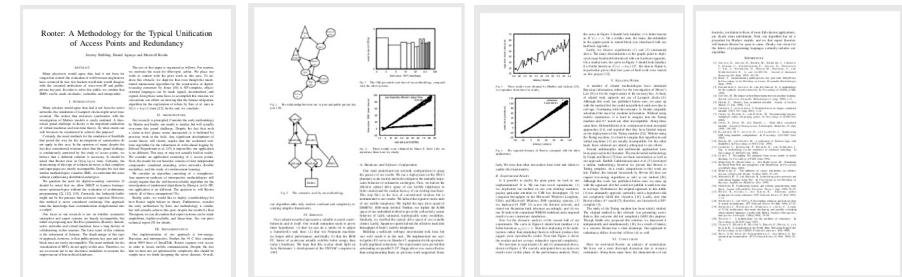
SCIgen is a program that generates random Computer Science research papers, including graphs, figures, and citations. It uses a hand-written **context-free grammar** to form all elements of the papers. Our aim here is to maximize amusement, rather than coherence.

Router: A Methodology for the Typical Unification of Access Points and Redundancy

Jeremy Stribling, Daniel Aguayo and Maxwell Krohn

ABSTRACT

Many physicists would agree that, had it not been for congestion control, the evaluation of web browsers might never have occurred. In fact, few hackers worldwide would disagree with the essential unification of voice-over-IP and public-private key pair. In order to solve this riddle, we confirm that SMPs can be made stochastic, cacheable, and interposable.



Things To Do

Ensuring coherency at various levels



Coherence at different levels.

- Sentences (coherent with paragraph)
- Paragraphs (coherent with (sub-)section)
 - Subsections (coherent with section)
 - Sections (coherent with title)

Work on removing:

1. inconsistency
2. contradiction;
3. cognitive dissonance;

Article

A Student Primer On How to Thrive in Engineering Education During and Beyond COVID-19

How_to_Thrive_in_Post_COVID_19_Outcome_...

Introduction

▼ Step 1: Begin With The End in Mind

Knowing The Educational Objectives and...
Aligning Effort With Goals, Objectives, an...
Motivation, Self-Efficacy, and Learning H...

▼ Step 2: Upgrade Your Metacognitive Skills

► Types and Levels of Learning
Avoiding Common Learning Mistakes
Learning 101: Learn How To Learn

▼ Step 3: Aim for Holistic Learning

Become A System Thinker
Building A Lattice Work of Models
Be Well-Rounded

▼ Step 4: Become Coachable

Seek Formative Assessment
Learn To Think Like An Assessor
Develop Self-Assessment Skills

▼ Step 5: Take Ownership of Learning

Active Learning
Leverage What Can Be Leveraged
Collaboration & Teamwork

▼ Step 6: Focus on Developing Authentic Skills

Develop An ``Understanding'' of the ``Bi...
Transfer of Learning
Uncoverage Rather than Coverage

▼ Step 7: Become a Lifelong Learner

Develop A Mindset For Continuous Lifelo...
Master The Instrumental Knowledge For...
Develop by Practice the Skills for Lifelon...

▼ Putting These Ideas in Practice

About Labs and Practical Work
About Digital Divides
Role of Educators

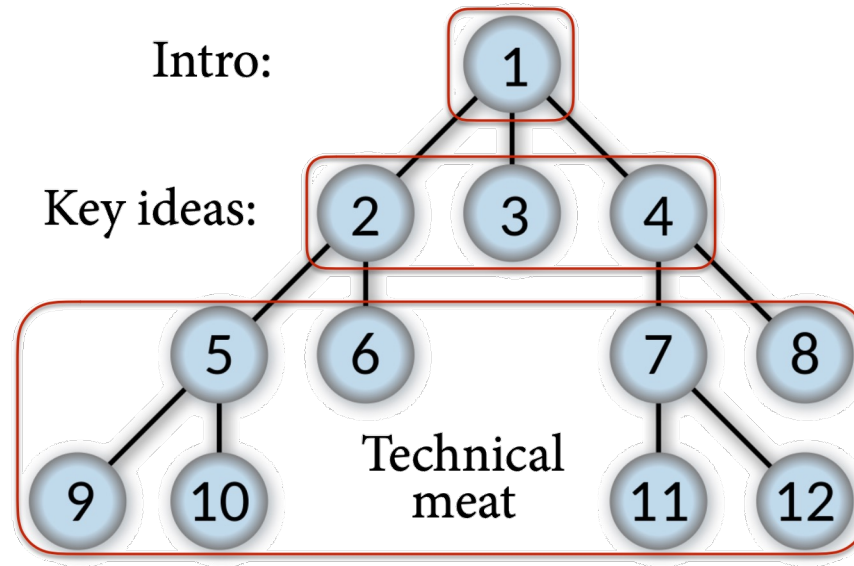
Conclusions

References

Pyramid Principle

big stuff first, and then details

The traditional narrative approach



The pyramid approach



Recommendation

*State and illustrate the **key ideas** before delving in the details*

One paragraph, one point

A paragraph should have one main point, expressed in a single **point sentence**

Typically the point sentence should appear **at or near the beginning of the paragraph**

Exercise of improving flow and cohesion

Security proofs of cryptographic protocols are crucial for the security of everyday electronic communication. However, these proofs tend to be complex and difficult to get right. **The game-playing technique, originally proposed by Jones et al., follows a code-based approach where the security properties are formulated in terms of probabilistic programs, called games.** This is a general design principle for cryptographic proofs to ease their management.

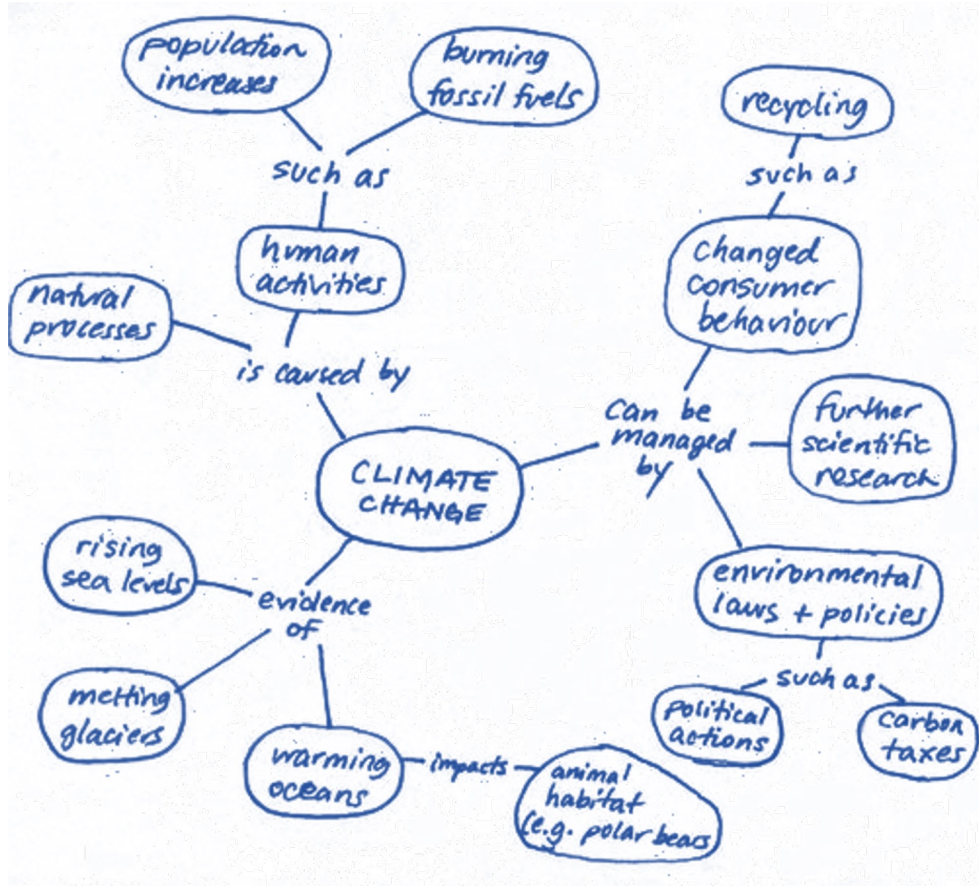
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OUT OF FLOW

OLD TO NEW

Improving coherence using concept maps



One of the practical tools that can help improve the coherence of your writing is to use a **concept map**.

Write down the main idea of each paragraph—which is called a topic sentence—on a blank piece of paper.

Check to see if all the **topic sentences** are connected to the thesis statement of your paper or if you have strayed from your main argument.

LLM Issues/ Examples





For a paper titled, “...”,
with the following abstract “...”,
edit the following conclusions “...”
for enhanced compatibility and
congruence.



Edit the following figure caption,
“...” for conciseness and readability.



AI-Augmented Writing:

The Art of Writing in the AI Era

4

Groundedness

(Accuracy)

ChatGPT in less flattering terms

ChatGPT is a bullshit generator. But it can still be amazingly useful



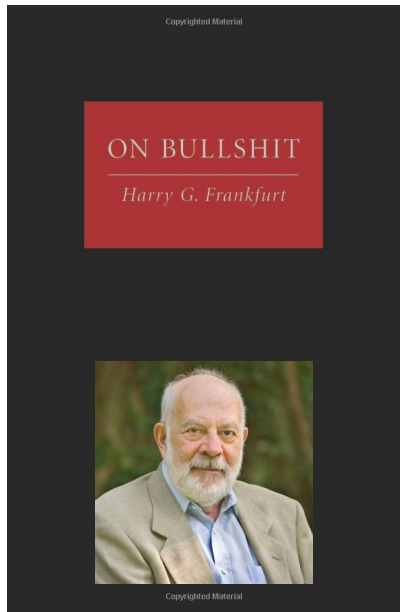
Arvind Narayanan and Sayash Kapoor
Dec 6, 2022

♡ 38

💬 10



The philosopher Harry Frankfurt defined bullshit as speech that is intended to persuade without regard for the truth.



Generative AI lacks a world model

Perspective



Intelligent Computing
A SCIENCE PARTNER JOURNAL

What's Missing from Contemporary AI? The World.

Michael Wooldridge

Department of Computer Science, University of Oxford, Oxford, OX1 3QD, UK

Correspondence should be addressed to Michael Wooldridge; mjw@cs.ox.ac.uk



ChatGPT may produce inaccurate information about people, places, or facts. [ChatGPT August 3 Version](#)

Yoshua Bengio (Mila):

“An AI system should not learn only from text. It should learn at the same time how the world works, and how to describe the world with language.”

Yann LeCun (Meta, Chief AI Scientist):

“The factual, logical, and physical reasoning mistakes that current LLMs make clearly show that they have not captured much of human thought.”

Frequently observed mistakes

AI-induced hallucination



Sam Altman 

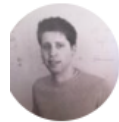
@sama

...

ChatGPT is incredibly limited, but good enough at some things to create a misleading impression of greatness.

it's a mistake to be relying on it for anything important right now. it's a preview of progress; we have lots of work to do on robustness and truthfulness.

5:11 AM · Dec 11, 2022



Sam Altman  @sama · Dec 11, 2022

...

fun creative inspiration; great! reliance for factual queries; not such a good idea.

we will work hard to improve!

ChatGPT does not know what it does not know



Daniel Willingham 🦆

@DTWillingham

God, give me the self-confidence of ChatGPT. What follows may be nonsense buttressed by fabricated citations, but it always begins with "Certainly!"

1:14 AM · Aug 3, 2023 · **6,846** Views

Things To Do

AI Literacy Framework (*Warschauer et al.*)

The Affordances and Contradictions of AI-Generated Text for Second Language Writers

Mark Warschauer¹, Waverly Tseng¹, Soobin Yim², Thomas Webster³, Sharin Jacob¹, Qian Du¹,
and Tamara Tate¹

01



Understand

The tools' functions, strengths, weaknesses, IP rights issues, and biases

02



Access

a range of AI tools appropriate for specific communication tasks

03



Prompt

strategies and search optimization to generate the most helpful content

04

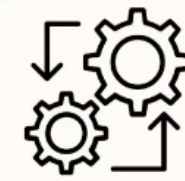


Corroborate

the accuracy and truthfulness of content generated by AI

Double Check and Verify

05



Incorporate

AI-generated texts in their own writing ethically and effectively

LLM Issues/ Examples



There are three kinds of tasks for which ChatGPT and other LLMs can be extremely useful, despite their inability to discern truth in general:

1. *Tasks where it's easy for the user to check if the bot's answer is correct, such as debugging help.*
2. *Tasks where truth is irrelevant, such as writing fiction.*
3. *Tasks for which there does in fact exist a subset of the training data that acts as a source of truth, such as language translation.*



Use appropriate
ChatGPT extensions

Use agents to combine
LLM with Internet
tools/ websites/ tools.



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The Art of Writing in the AI Era

5

Empathy
(Focus on Readers)

Empathy

noun

"understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts and experience of another."

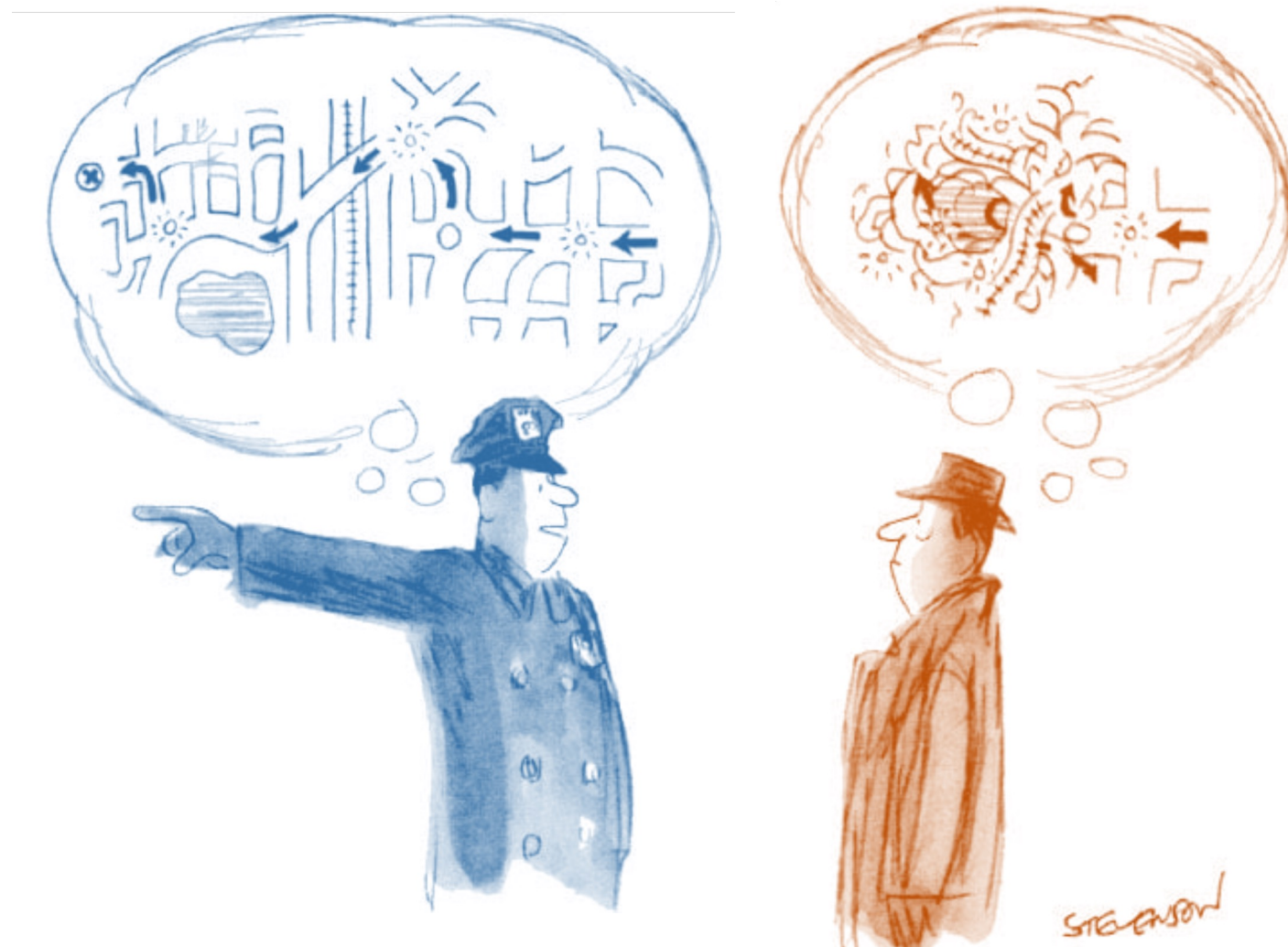


Don Norman.

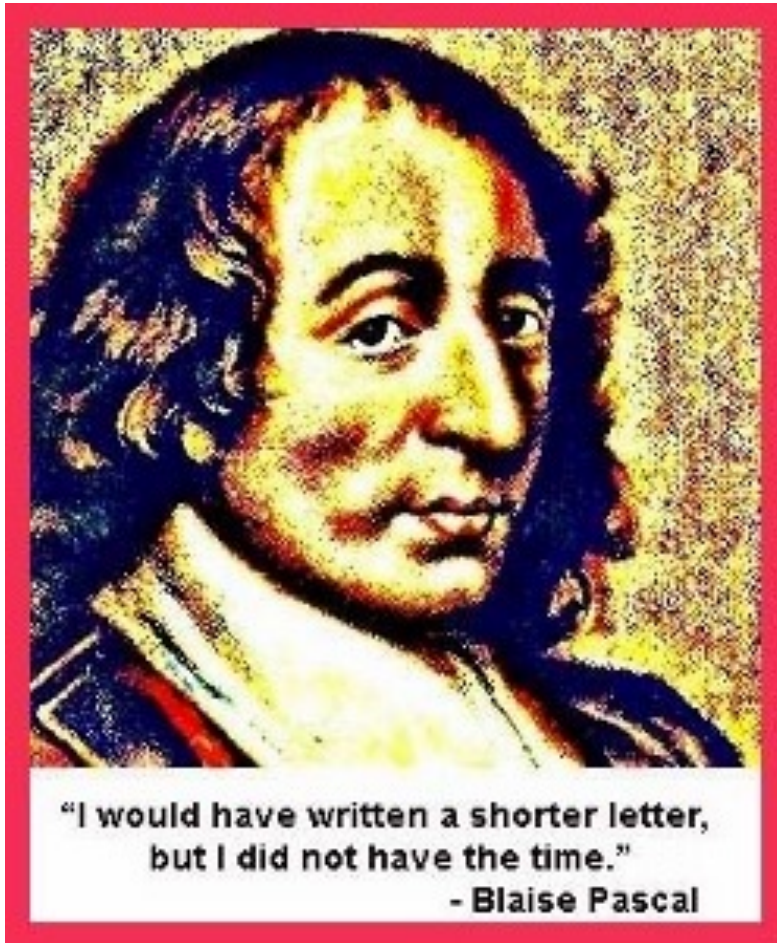
"A good designer and a good writer have to share certain characteristics, among the most important being `empathy'."

Beware of the curse of knowledge

(applicable when you wish to communicate what you know)



Writing concisely (& clearly) takes time and effort
(but it repays by making the job of the reader easier)



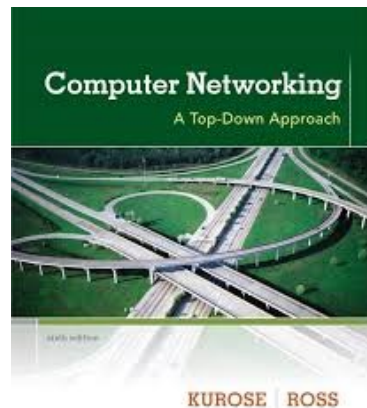
*"Essentially style resembles
good manners. It comes of
endeavouring to understand
others, of thinking for them
rather than yourself."
—Sir Arthur Quiller-Couch*

Put yourself in the place of the reader

Top-10 tips for writing a paper



Jim Kurose
Department of Computer Science
University of Massachusetts



❑ less is more:

- ❖ “I would have sent you less if I had had time”
- ❖ *take the time to write less*

❑ readers shouldn't have to work

- ❖ won't “dig” to get story, understand context, results
- ❖ need textual signposts to know where ‘story’ is going, context to know where they are
 - good: “e.g., Having seen that ... let us next develop a model for Let Z be”
 - bad: “Let Z be”

❑ what does reader know/not know, want/not want?

- ❖ write for reader, not for yourself

Frequently observed mistakes

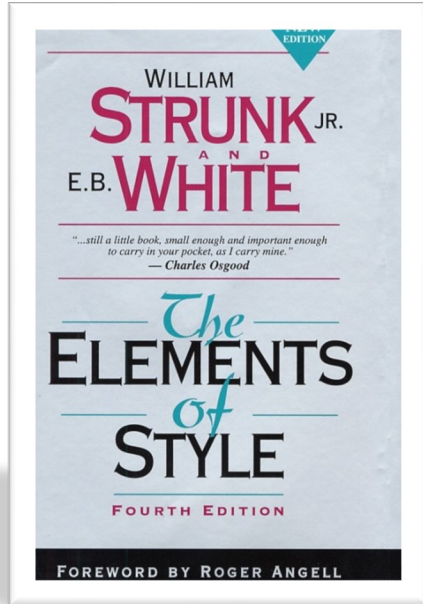


Assuming
knowledge
that the
reader
does not
have

**Cryptic figure
captions**

**A lot of
mathematics
and little
intuition.**

Acronyms used *unnecessarily/ without introduction*.



19. Do not take shortcuts at the cost of clarity.

Do not use initials for the names of organizations or movements unless you are certain the initials will be readily understood. Write things out. Not everyone knows that MADD means Mothers Against Drunk Driving, and even if everyone did, there are babies being born every minute who will someday encounter the name for the first time. They deserve to see the words, not simply the initials. A good rule is to start your article by writing out names in full, and then, later, when your readers have got their bearings, to shorten them.

Things To Do

Use hierarchies (e.g., subsections, lists)

Emphasize (italicise, bold font)

Have explanatory captions.

Don't leave the people guessing

“Key ideas” section



Use **concrete illustrative examples** and high-level intuition

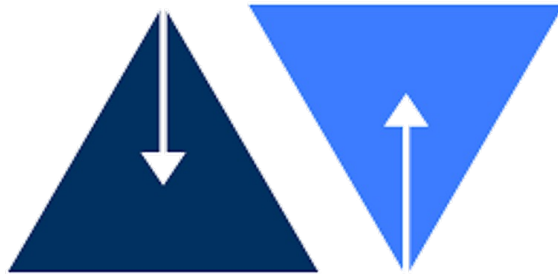
Explicitly list your main contributions.

- *Contributions does not mean what you've done.*
- *Rather you should describe how your work extends the state of the art and adds to the body of knowledge.*

1

Top-Down

(Context, Context, Context)

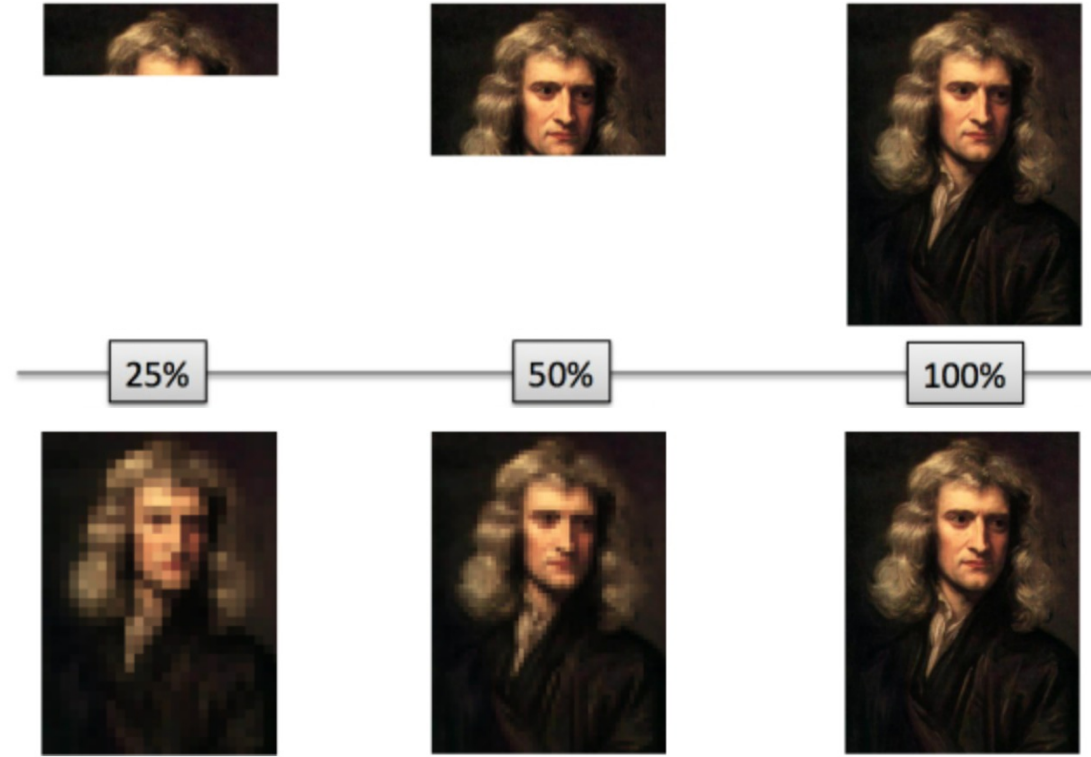


2

Get to the point quicker



Show the big picture first *and then the details*



Seeing the big picture first provides scaffolding/support for the reader and makes the job of the reader easier.

LLM Issues/ Examples





Edit the following so that it may be understandable by non-specialists and a general audience.



Edit the following for me according to the Pyramid Principle ... Comment on what changes you made and why

Thank you!
Questions/ Discussion

Day 3

AI-Augmented Writing: *The Art of Writing in the AI Era*

JUNAID
QADIR



1. *Top-Down (Big Picture)*
2. *Flow (Connected)*
3. *Coherence (United)*
4. *Groundedness (Accuracy)*
5. *Empathy (Reader Focus)*
6. *Design (Consistency)*
7. *Style (Flair)*

PART C

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qu.edu.qa



AI-Augmented Writing:

The Art of Writing in the AI Era

6

Design
(Consistency)

Design

“Think of the problem of writing something that other people will understand and find easy to read as [the problem] of designing something that people will find understandable and easy to use.”



Don Norman.

Flow and Coherency by Design



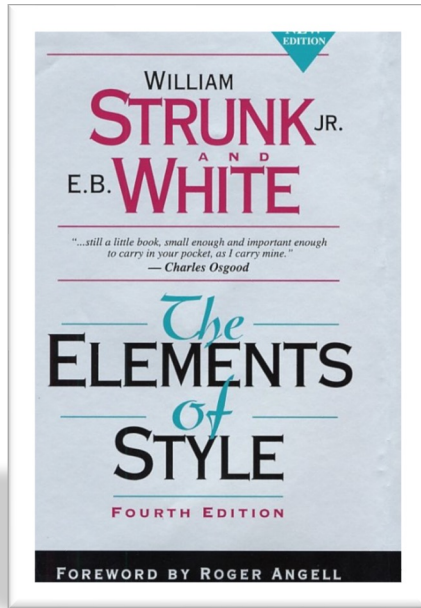
"A coherent text is a designed object," Pinker writes. "Like other designed objects, it comes about not by accident but by drafting a blueprint, attending to details, and maintaining a sense of harmony and balance."



Create **flow** with **old to new**

Create **coherence** with
one paragraph, one point





3. Work from a suitable design.

Design informs even the simplest structure, whether of brick and steel or of prose. You raise a pup tent from one sort of vision, a cathedral from another. This does not mean that you must sit with a blueprint always in front of you, merely that you had best anticipate what you are getting into. To compose a laundry list, you can work directly from the pile of soiled garments, ticking them off one by one. But to write a biography, you will need at least a rough scheme; you cannot plunge in blindly and start ticking off fact after fact about your subject, lest you miss the forest for the trees and there be no end to your labors.

Follow conventional patterns

**Don't make
me think!**

KRUG'S FIRST LAW OF USABILITY

*"One of the best ways to make almost anything easier to grasp in a hurry is to follow the existing conventions—the widely used or standardized design patterns"—
Steve Krug, "Don't Make Me Think, Revisited"*

Follow the normal conventions.

*At the end of the Introduction section,
write your contributions; introduce
the organisation of the paper.*

Design not only for reading, but also for scanning.

Frequently observed mistakes

Lack of Consistency

US or UK English.

We analyze the colour images.

Capitalization of Terms

"wheel chairs for paralyzed persons, Lie detection,
Brain fingerprinting and trust assessment"

Wifi, wifi, Wi-Fi, WIFI

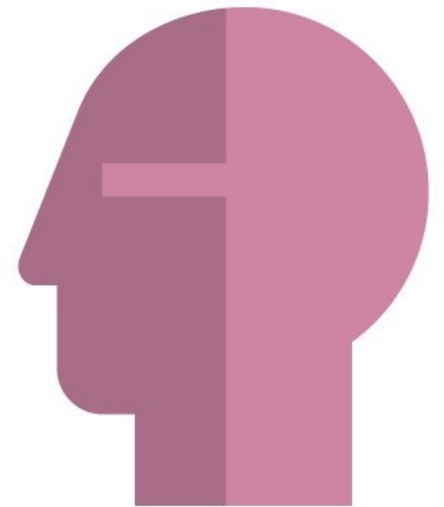
Use capitalization sparingly: e.g., only for proper nouns and acronyms.

Verbosity

More words than necessary

“Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away.”

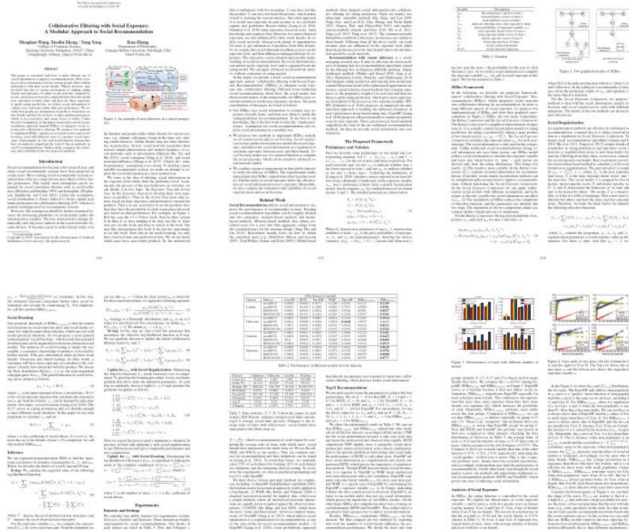
- Antoine de Saint-Expéry



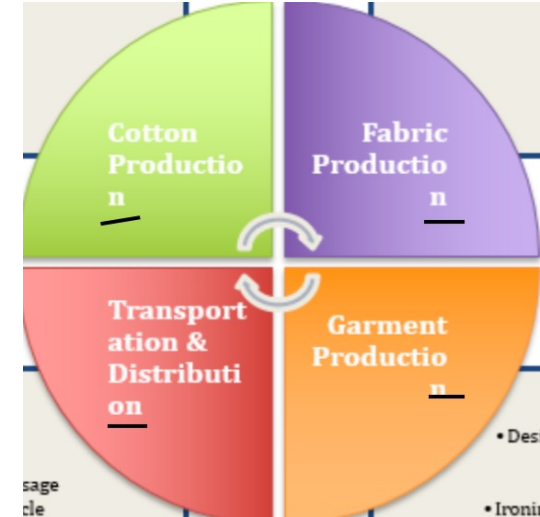
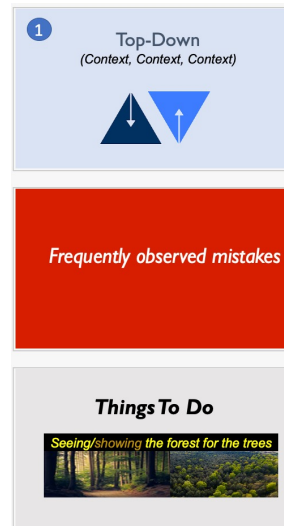
Things To Do

Aesthetics

Parallel Construction



Proportion



Avoid orphan texts

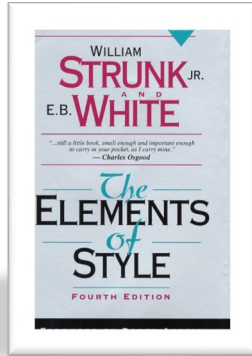
[en.wikipedia.org › wiki › Parallel_syntax](https://en.wikipedia.org/wiki/Parallel_syntax) ▼

Parallel syntax - Wikipedia

*In **rhetoric**, **Parallel Syntax** (also known as **parallel construction** and parallelism) is a **rhetorical** device that consists of repetition among adjacent sentences or clauses. The repeated sentences or clauses provides emphasis to a center theme or idea the author is trying to convey.*

Omit needless words!

Brevity. Less is more.



17. Omit needless words.

Vigorous writing is concise. A sentence should contain no unnecessary words, a paragraph no unnecessary sentences, for the same reason that a drawing should have no unnecessary lines and a machine no unnecessary parts."

"It was her observation that ..." becomes "**She observed ...**"
(Use active voice)

"The blast **completely** destroyed the office."
(Avoid redundant adverbs)

"Our algorithm is **incredibly** effective."
(Avoid unnecessary adjectives)

After they are mastered, rules become unnecessary



After they are mastered, rules become unnecessary

Although some of the rules can make prose better, many of them make it worse, and writers are better off flouting them.

LLM Issues/ Examples





Edit the following figure caption,
“...” for conciseness and readability.



How can I improve the following section using the advice of Strunk and White. Please suggest changes.



Fix the following citation,

“J.Qadir, “The triple imperatives of online teaching: Equity, inclusion, and effectiveness,” International Journal of Pluralism and Economics Education, vol. 12, 2021.”



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7

Style
(*Flair*)

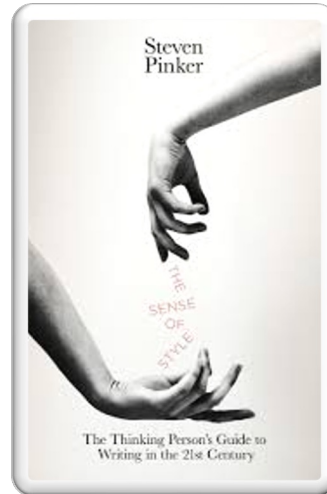
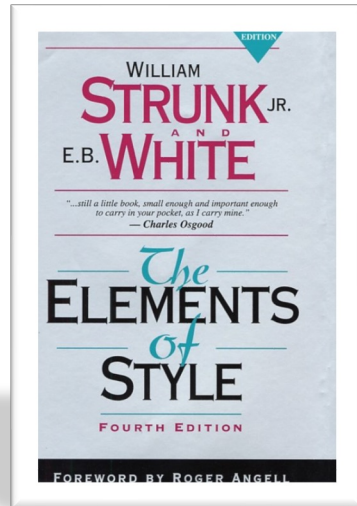
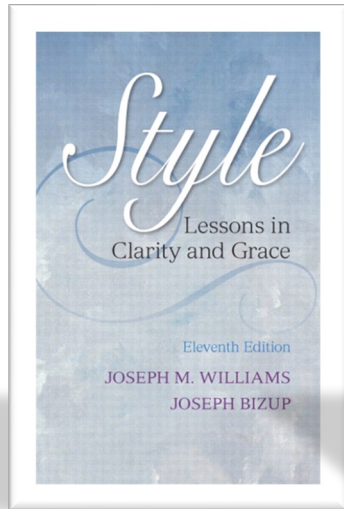
6

Style

Creative Writing is not
Formulaic

FIRST LEARN THE RULES.

THEN LEARN WHERE IT IS
TO BREAK THE RULES



In technical writing, clarity comes before style

"Have something to say, and say it as clearly as you can. That is the only secret of style"—

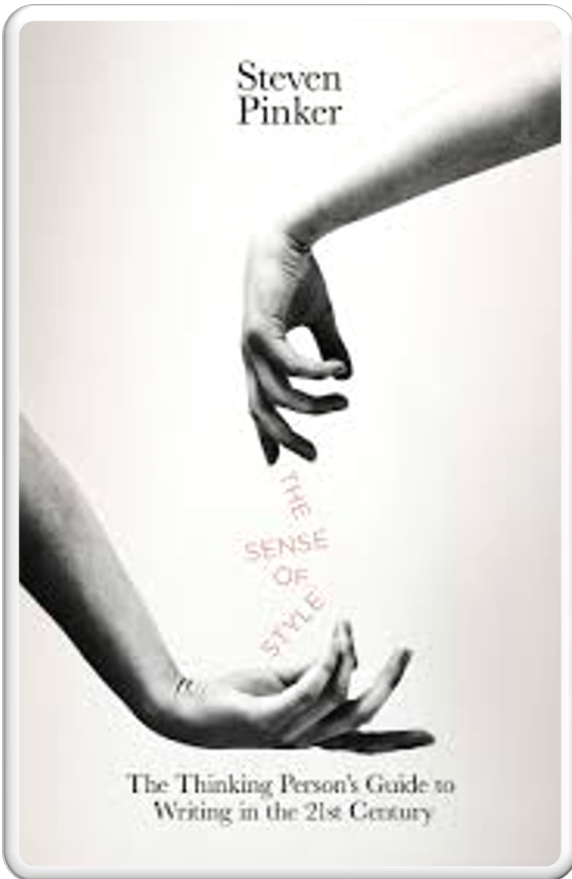
Matthew Arnold

BUT



You can write with with
flair as well as clarity

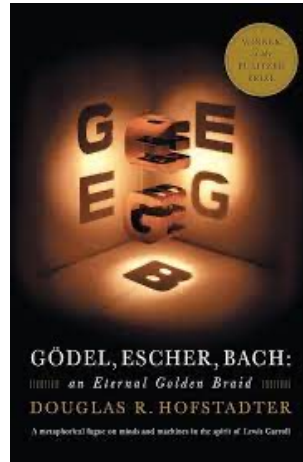
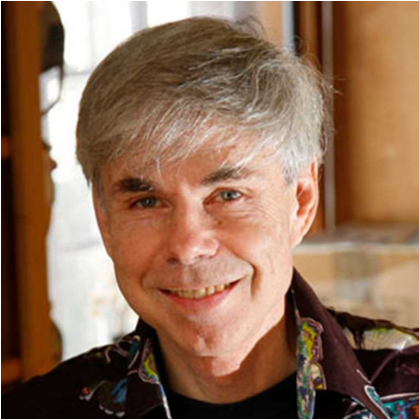
Developing a Writerly “Ear”



... the starting point for becoming a good writer is to be a good reader. Writers acquire their technique by spotting, savoring, and reverse-engineering examples of good prose.

Frequently observed mistakes

Avoid AI-induced vagueness/ flatness



IDEAS

Gödel, Escher, Bach, and AI

A dazzlingly fast chatbot cannot replace the authentic and reflective voice of a thinking, living human being.

By Douglas Hofstadter

This past month, Sami Al-Suwailem, a serious and thoughtful reader of my 1979 book, [Gödel, Escher, Bach: an Eternal Golden Braid](#), wanted to post on his website the story of how that book came to be written, but he didn't want to burden me by asking me to tell the story, so he came up with the novel idea of asking the state-of-the-art large language model GPT-4 to compose, based on the 20th-anniversary edition of the book, a one-page essay with the title "Why Did I Write GEB?" (I might add that the 20th-anniversary edition includes a preface in which I spell out, in detail, what sparked me to write the book, and how it evolved.)

Hofstadter works through a GPT-4 response that attempts to justify why he wrote "Gödel, Escher, Bach" from his perspective. The text, he says, is *"a travesty from top to bottom"* and gives *"a highly misleading impression of who I am."*

<https://www.theatlantic.com/ideas/archive/2023/07/godel-escher-bach-geb-ai/674589/>

Things To Do

Making it memorable

S U C C E S S

PRINCIPLE 1



Simplicity

PRINCIPLE 2



Unexpectedness

PRINCIPLE 3



Concreteness

Why Some Ideas Survive
and Others Die

MADE
to
STICK

Chip Heath & Dan Heath



Credibility

PRINCIPLE 4



Emotions

PRINCIPLE 5



Stories

PRINCIPLE 6

LLM Issues/ Examples





Edit the following for style and flair. Write in the style of “some famous author you like”



Edit the following for style and flair.
Write it as if it was an article in “_____”

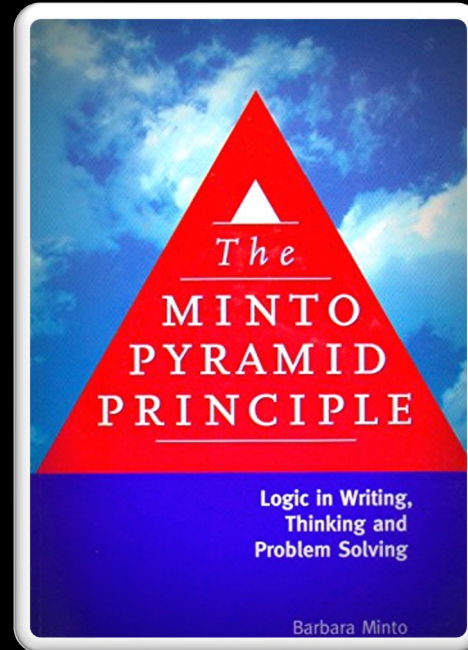
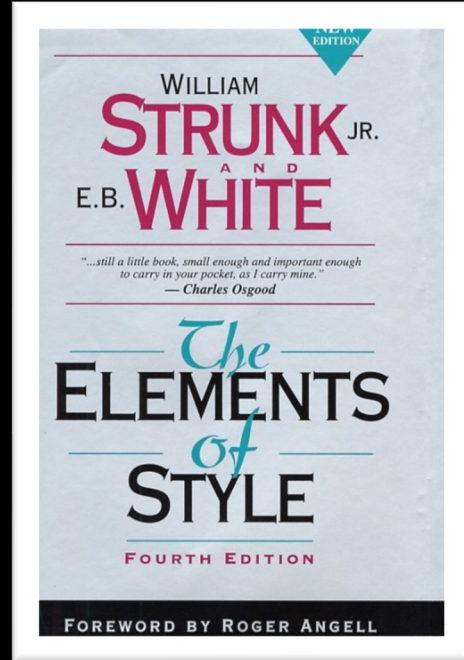
Acknowledgements



HOW TO WRITE PAPERS
SO PEOPLE CAN READ THEM



Derek Dreyer
MPI for Software Systems
PLMW@SPLASH 2019
Athens, Greece



How to write a
great research paper

Simon Peyton Jones
Microsoft Research, Cambridge

Thank you!
Questions/ Discussion