

Writing Scientific Papers & Making Presentations in English Citing References Correctly



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Writing Scientific Papers in English



Comparison of Writing Papers in Chinese and English



Common Rules

- Scientific attitude
 - Theoretic investigation
 - Experiments
 - Numerical testing or simulation
- Logics
 - Logical presentation
 - Language flow

- Structure and Clarity
- Know your readers

Differences

- Cultural
 - Confidence versus modesty
 - “Responsibility” of delivery
- Language
 - **Direct translations often do not work!**
 - 经济法 ≠ Economic Law → Business Law
 - 博士后流动站 ≠ Post-doctor mobile station
→ Postdoctoral program

- Practice of professionalism
 - Unacceptable authorship of “edited by”
 - Cite ideas and quote “ ” original sentences and paragraphs

Main Contents of a Scientific Paper



■ Title

- Best representation of the paper: contributions and unique features
- Generally not a sentence

■ Abstract

- Summary in a few hundred words
- Very important to attract readers

■ Introduction

- Motivations and problem descriptions
- Academic and/or industrial impact
- Literature reviews
 - Show the state of art
 - Cite references available to general public
 - Avoid offensive remarks
 - Use the most recent results
 - Do not cite too many “home-made” references
- Summary of the major contributions of the paper
- Organization of the paper

■ **Problem Descriptions or Formulation**

- System configuration, environment, etc
- Definitions of all notation for variables, symbols, etc.
- Mathematical equations

■ **Methodology**

- Main ideas to solve the problem
- Theorems and proofs
- Descriptions of the approach or algorithm
- Performance analysis
- Unique features of the method

Let the contributions stand out!!!

■ **Results of applications, experiment or testing**

- Description of the practical or experiment system
- Description of the data and the associated system
- Descriptions of the computer system
- Presentation of the results: tables, figures, etc.
- Applications and benefits

■ **Conclusions**

- Summary of your findings (not a repeat of abstract)
- Concluding remarks

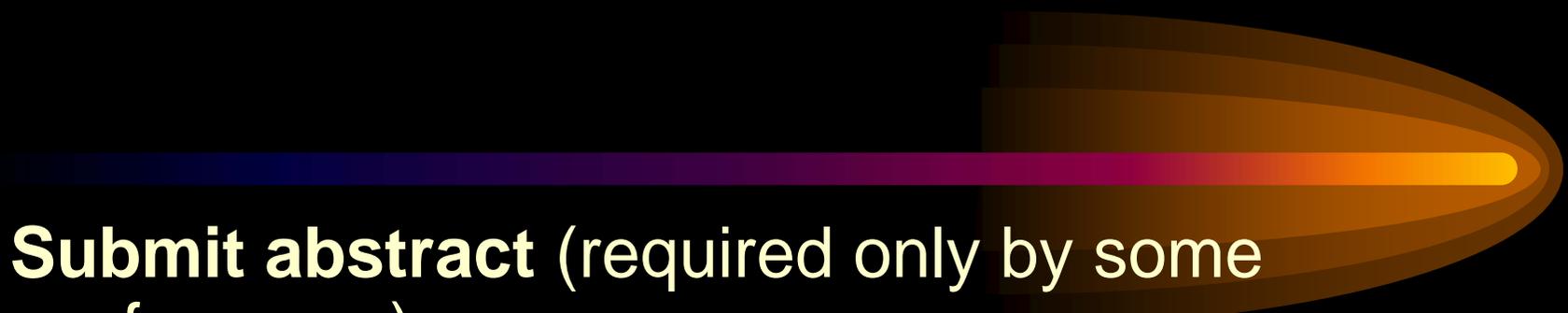
■ Acknowledgment

- Acknowledge the funding agencies
- Thank individuals

■ References (**Very important!!!**)

- List references in appropriate format
- Have recent references if possible
- Give complete information
- List appropriate numbers of references
- Do not list anything that is not refereed to

Procedure to Submit a Paper



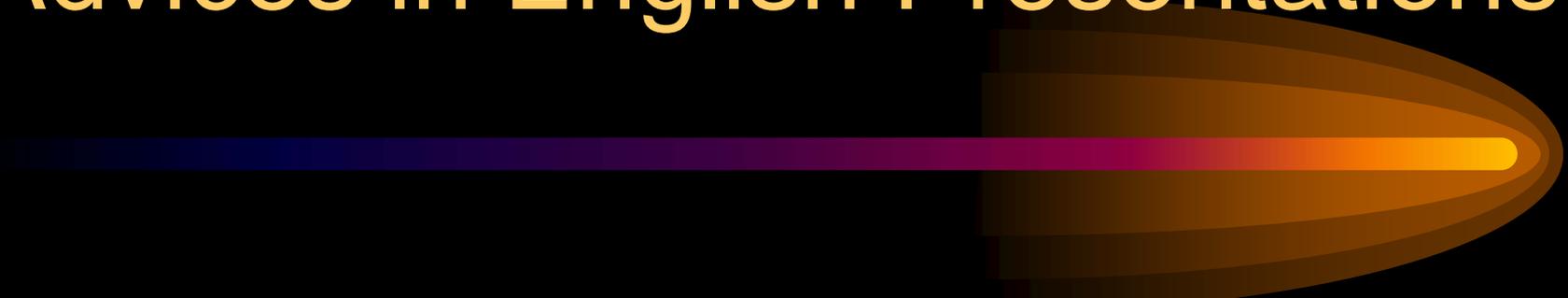
- **Submit abstract** (required only by some conferences)
- **Submit draft paper**
- **Modify based on reviewers' comments**
 - Enclose Response to Reviewers' Comments to explain each and every of your changes
- **Submit camera-ready manuscripts** (required only by conferences)
- **Proof reading**
 - Return promptly

Advices in English Presentations



- A large number of papers from Chinese authors are rejected simply because the papers are not well written.
- A strong basis for rejecting a paper: “the paper is poorly written; there are many spelling and grammatical errors. I have to guess what the authors mean, and therefore it is difficult to judge the contribution of the paper.”

Advices in English Presentations



- Direct translations often do not work
 - More example:

我抓紧时间完成

≠

I'll take my time to finish the work

Example of Student Draft

Production Scheduling with Hybrid Dynamics and Constraints

Abstract— The optimal control for a class of discrete-time hybrid systems is discussed in this paper. The problem is formulated in forms of mixed integer programming with discrete and continuous states and controls as the variables to be optimized. A Lagrangian Relaxation (LR) based algorithm is presented. Based on the analysis of the relationship between discrete and continuous state transition, a dynamic programming based approach aiming at the exact optimal solution of dual sub-problem is given. The new approach requires no convex hypothesis on the costs related to continuous state variables. Elementary complexity analysis suggests the new method is efficient and effective and the conclusion is confirmed by numerical testing results

Example of Submitted Version

Production Scheduling with Hybrid Dynamics and Constraints

Abstract— Production scheduling has significant economic impact for many industrial production systems. A new method is developed in this paper to solve a class of production scheduling problems with hybrid dynamics and constraints. It is based on a novel formulation of the discrete states so that the problem is decomposed into solving continuous and discrete problems separately. By employing the features of piecewise linear functions, break points of cost-to-go are mapped across time, and the production levels of a consecutive running span are determined efficiently by dynamic programming without discretization. Dynamic programming is also applied to determine the optimal discrete operating states across time. The new method can deal with non-convex continuous cost functions, often encountered in production scheduling problems. The numerical testing results show the new method is efficient and effective.

Advices in Writing for Beginners



- Write simple sentences with present tense
- Use spelling check to make sure that all words spelled correctly
- Use grammar check to find out inconsistency
- Pay particular attention to the spellings of the names in references

Advices in Writing for Beginners



- Professionalism in writing
 - consistency in format: font size, space, paragraph, etc
 - consistency in punctuations
 - consistency in equations
 - consistency in references
 - ...

Consistency in presentation!

Advices in Writing for Beginners



- Balance in using mathematical symbols and equations → only serve as **SHORTHAND**

Advices in Responding to Reviewers



- Never argue with reviewers and editor: our first goal → get paper published rather than making enemies
- Know when to give up for a particular paper worthwhile for no more efforts

Making Presentations in English



Importance



- Extremely important in one's professional career
- Possible turning point in many cases
- Best opportunity to impress people

Rule of Thumb



- Know your audience
- Presenter is responsible delivery
- Use Powerpoint whenever possible
- Prepare, prepare, prepare
- Practice, practice, practice
- Success proportional to efforts

Advices in Preparation



- Use multiple slides or the animation feature to control the display of information on your slides.
- Never make a slide too crowded
 - No busy slide
 - Copy text from your thesis totally unacceptable
 - The minimal size for text is 18 POINTS, and occasionally in graphics 14 points can be used. Very rarely in detail graphs you can use 12 points.

Advices in Preparation



Provide a road map and use it via the device of a summary slide below

Topic 1



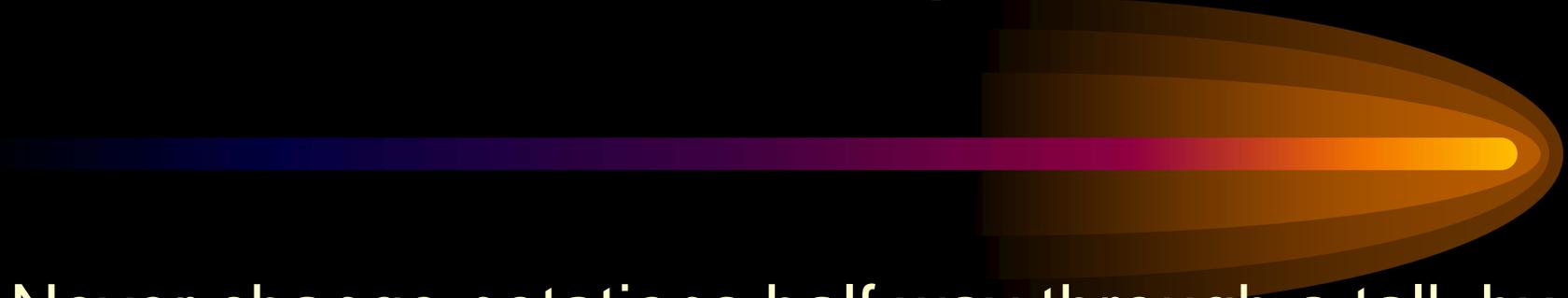
Topic i



Topic N

to highlight sub-topical matters, i, under discussion

Advices in Preparation



- Never change notations half way through a talk by copying those in a another to save efforts
- When using a graphic notation, make the graphics distinct and use it repeatedly
- Use one consistent name or label to denote one thing
- Don't use more than 5 variables throughout
- Always define things, your problem statement, mathematical symbol, your goals, etc.

Organization of Slides

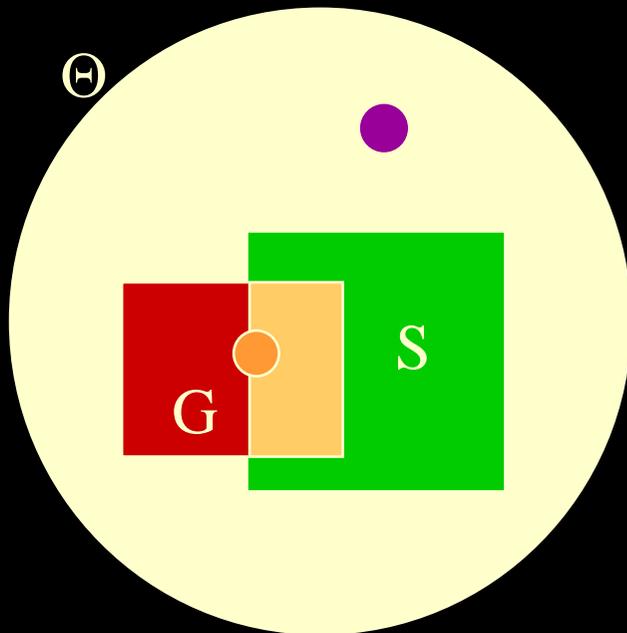


- Title
- Table of contents
- Use animation properly: examples

Example of good slides

by Prof. Yu-Chi Larry Ho

Soft Optimization



⊕

Search Space

○

True Optimum

●

Est. Optimum

■

Good Enough set G

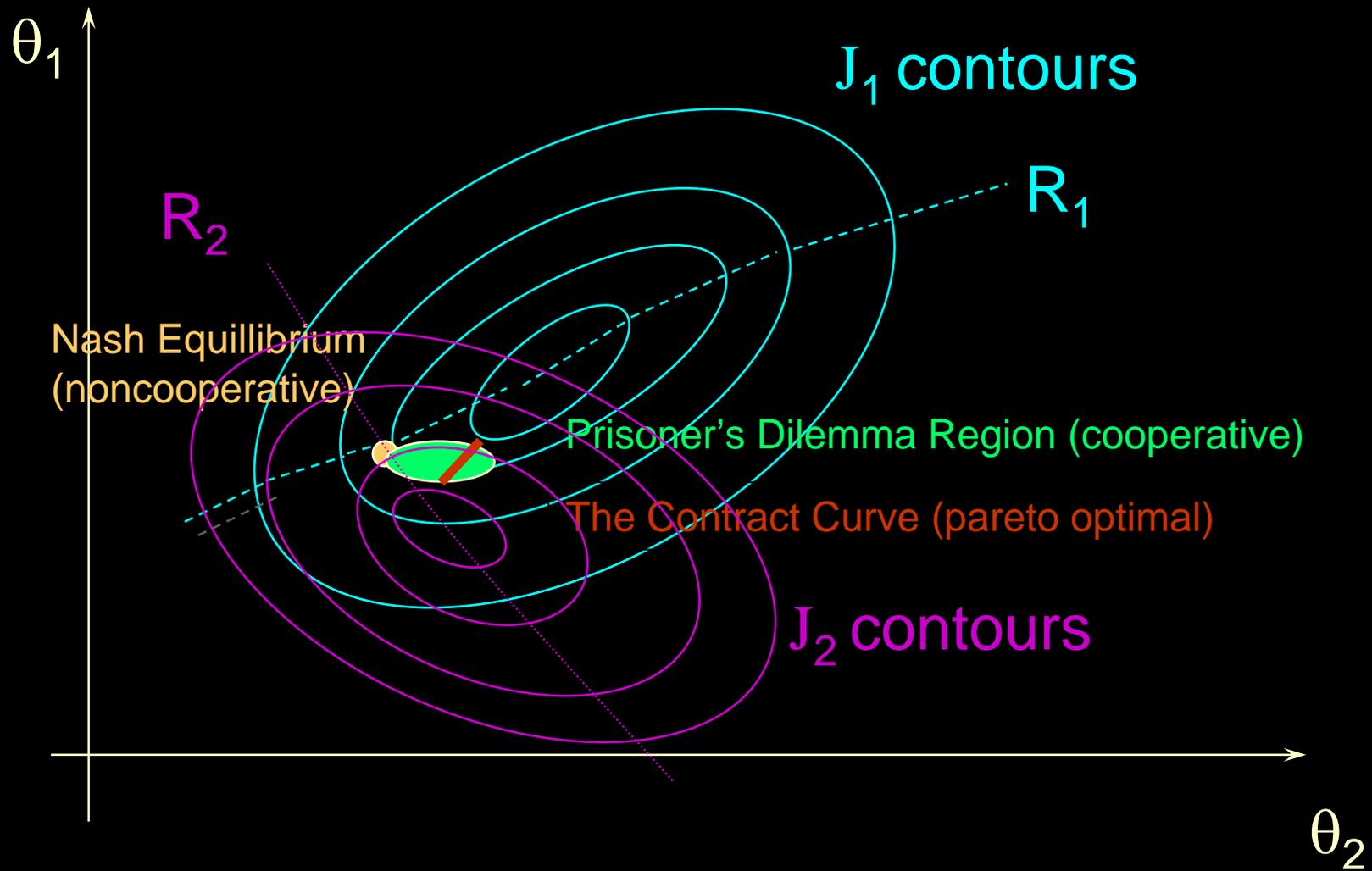
■

Selected set S

■

$G \cap S$

Multi-person Optimization



- Arrange text and graphs appropriately:
examples

A Historical Perspective

by Prof. Larry Ho of Harvard University



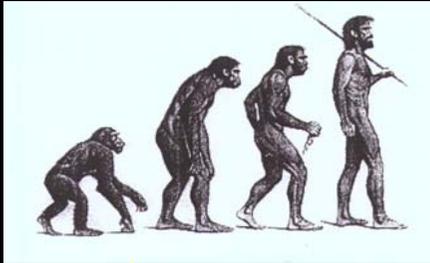
1st IFAC
Congress

IBM 709

Civilization
begins

Tools, farming,
arithmetic,

The 1st GA



4 million
BC

4000 BC

40 yrs
ago

4 yrs
ago

logtime

Advices in Presentation

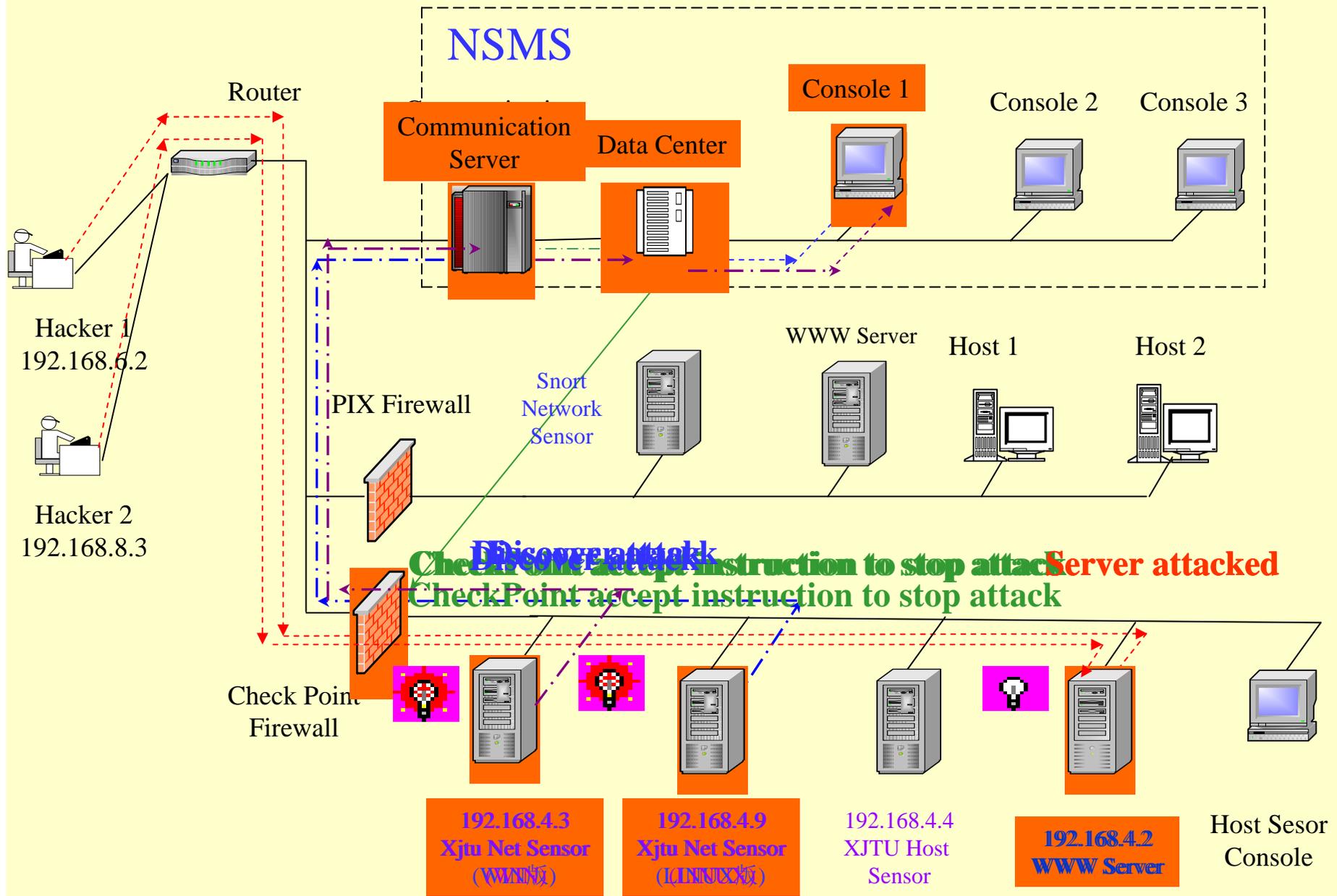


- Don't read but present with confidence
- Mention main goal early to capture attention
- Try to vary emphasis. A monotone delivery and uniform emphasis deaden the presentation
- Don't slur your pronunciations and let sentences trail off

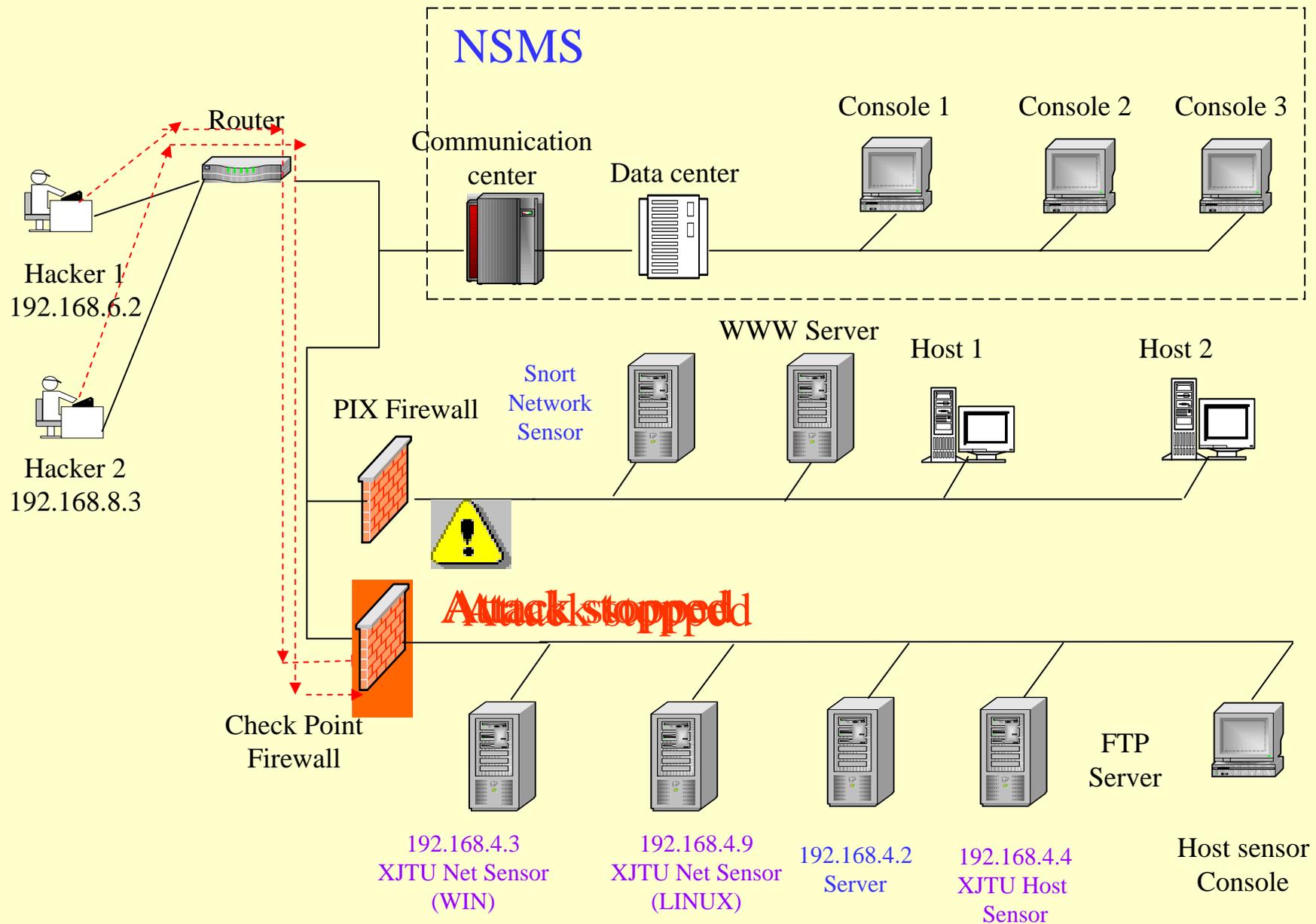
Example of a Bad Slide

1. Each supply bidder submit a number of supply bids for its generating units or an aggregated supply bid for the entire company at each hour, 24 hours a day. The supply bid is price versus quantity curve, piece-wise linear and monotonically increasing as shown in Figure 1
2. Each demand bidder submit a number of demand bids or an aggregated demand bid for the entire company at each hour, 24 hours a day. The demand bid is price versus quantity curve, piece-wise linear and monotonically decreasing as shown in Figure 2.
3. After auction process is over, the agent for the market organizer aggregates all supply bids into one aggregated supply bid curve as in (1)

Coordinated Distributed Attacks of Multi-hackers



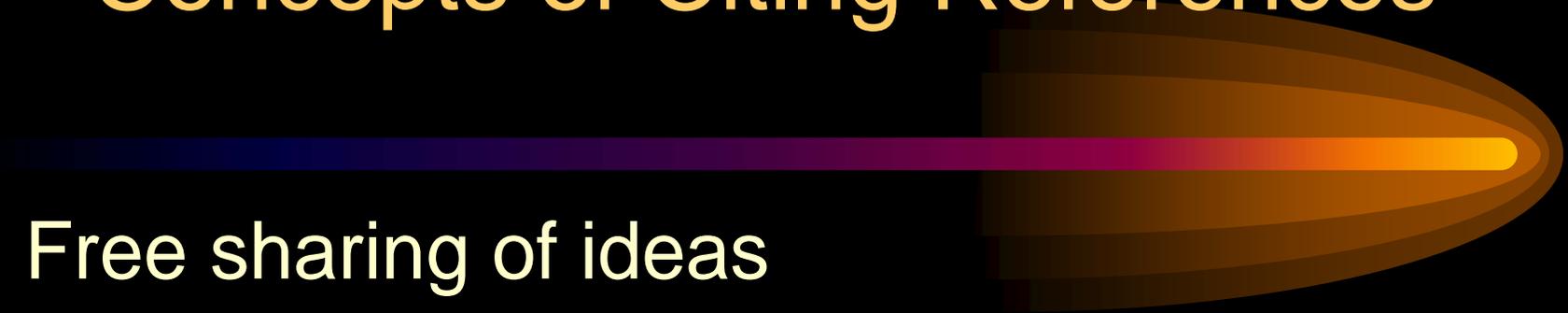
Coordinated Distributed Attacks of Multi-hackers



Citing References Correctly



Concepts of Citing References



- Free sharing of ideas
- Respect for the intellectual property right of scholars
 - Give credit where credit is due
 - Harsh punishment for plagiarism
 - Lesser forms of “plagiarism” due to cultural difference

How to Share Credit



- **EXPLICITLY** acknowledge the source
 - NOT sufficient to write a couple of paragraphs rephrasing of other people's words and providing a simple numbered reference, such as [xx].
 - Cite all the references listed
 - Acknowledge someone sincerely and properly

- Treat other people's idea and intellectual property with respect and care
 - Respect other people's ideas in academic exchanges
 - Ask permission for use of documents, etc
 - Copyright for use of graphs, etc
 - Be aware of the cultural differences

- Be generous to collaborators who indeed make contributions
 - Deal with the cases where contributions are not clear cut
- Be careful when taking credit
- Order of authorship
 - Contributions → most common and recommended by IEEE
 - Alphabet
 - Seniority

Summary



- Writing papers and making presentations in English are extremely important
- It is entirely possible for non-native speakers to write excellent papers and to make professional presentation in English
- Citing references correctly is one of the most important aspects in professionalism and academic ethnics
- Practice is the only way to move forward