

# On Research Talks

Hui Chen, Ph.D.

Department of Engineering & Computer Science

Virginia State University

# Acknowledgement

- Prepared based on
  - Chapter 16 in: Zobel, Justin. *Writing for computer science*. 3ed. New York NY: Springer, 2014
  - Material in Neil Dodgson's Research Skills class at Cambridge University

# Research Talk

- A brief *lecture* about a particular piece of research, intended for an audience of *other scientists*.
  - To openly educate and inform the audience
  - To learn from the audience
  - To have conversations between equals
- Length often determines styles (10 minutes, 30 minutes ...)
- *Sales pitches or hyperbole are inappropriate*

# Preparation

- Good preparation  $\neq$  write talk script
- Good preparation requires
  - Careful development of materials
  - Familiarity with the possible pitfalls
  - Practice, practice, and practice (rehearsals)

# How to begin?

From Presentation Zen, Garr Reynolds

- How much ***time*** do I have?
- What ***time*** of day?
- What is ***the venue*** like?
- Who are ***the audience***?
- What is ***the audience*** background?
- What do ***the audience*** expect of me?
- What do I want ***the audience*** to do?
- What is the fundamental ***purpose*** of my talk?
- What is the ***story***?
- What is my ***absolutely central point***?

Think about 5 **W's**

- When
- Where
- Whom
- Who
- What

# Structure your talk

- Talk is linear (different from the paper)
- Broadly speaking, talk about motivation, overview (or goals), background, contribution, evaluations, and conclusion, but more fluidly

# Your talk is one logical coherent story

According to Neil Dodgson

- Who? — title, author, venue, date
- What? — the key idea
- Why? — why it is important
- How? — technical details (if there is time - cannot do this in a five minute talk)
- Where? — where it leads next
- Final slide: — the key idea (leave this up during Q&A)

# Is this a good example?

## Outline

- ▶ Motivation
- ▶ Overview
- ▶ Background
- ▶ Contribution
- ▶ Evaluation
- ▶ Conclusion

“ This talk is about new graph data structures. I’ll begin by explaining graph theory and show some data structures for representing graphs. Then I’ll talk about existing algorithms for graphs, then I’ll show my new algorithms. I’ll show experimental results on our cluster machine and then show why the algorithms are useful for some practical graph traversal problems ..... I divide the talk into motivation, overview, background .....



# How about this one?

## A Data Structure for Fast Travelling Sales Man Algorithm

John Doe

Mary Doe Institute

“ My talk today is about new graph data structures. There are many practical problems that can be solved by graph methods, such as the travelling salesman problem, where good solutions can be found with reasonable resources so long as an optimal solution isn't needed. But even these solutions are slow if the wrong data structures are used. I'll begin by explaining approximate solutions to the salesman problem and showing why existing data structures aren't ideal, then I'll explain my new data structures and show how to use them to speed up the travelling salesman algorithms. I conclude with examples of where the new method makes a real difference .....

# Delivery

- Speak clearly (slowly?)
- Never read your slides to the audience (unless ...)
- Text on slides should, *at most*, be a reminder to what to say
- Talk *to* the audience, not to your self, not to the screen

# Slides

- *One* talk, *one* story
- *One* point per slide
- Slide space and layout: head, important, non-important (e.g., repeating logos)
- Color contrast
- Font family: sans-serif vs serif
- Font size
- Size of figure

# To learn more ...

