

Cybersecurity Research Seminar Fall 2015

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#5: Presentation Tips & Tricks

Class #5

- Tips for effective technical presentations
- Presentation Contents
 - Long presentation
 - Very short presentation
 - Medium-length presentation

Tips for Giving an Effective Technical Presentation

Questions

- What are you trying to say? What do you want people to "take away" from your presentation?
- Who is in your audience?
- How much time do you have? How much detail can you include?
- What content should be included?
- Anything else?

Questions


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Things to figure out before preparing content/style of your presentation

Questions

Things to work on only after addressing earlier questions



- What content should be included?
- Anything else?

Goals & Take-Away

- What is the goal of your presentation?
 - At a high level, are you trying to (1) convince people to read your paper, (2) collaborate with you, or (3) get feedback on your work.
 - At a deeper level, what technical “stuff” do you want to share with them?
- What do you want the audience to take away from your presentation?

Motivation vs. Teaching

- In almost all cases, you won't have enough time to “teach” your topic to the audience, no matter how technically strong your audience is
- Instead, you have an opportunity to give them just enough content to motivate them to go learn more on their own
 - Whether motivating them to read a paper you wrote or pointing them in other directions

Highlight Key Points

- Explicitly give the audience a summary of key points that they should take away with them
 - You are responsible as the presenter for identifying these key points (ideally 3-4 important concepts/contributions)
 - These should be simple and memorable
 - These key points should be the central focus of your entire presentation

Connecting to the Audience

- A talk with no audience is (mostly) useless
- Connecting to the audience is crucial
 - You need to know a lot about them (more on this shortly) but also understand why they would want to listen to you
 - Whatever your goal, make sure you're setting yourself up for success by providing some value to them
- In short:
 - 1) Persuade the audience to do something active (e.g., read your paper, work with you)
 - 2) Explain what's in it for them

Know your Audience

- Who will be in the audience when you present?
 - Are they familiar with your subject / topic?
 - What is their background / basis of understanding?
 - What are they likely to find interesting / exciting?
 - How diverse is the audience? How can you provide value across the entire audience?
- Your talk must be appropriate for your audience
 - Ex: don't assume everyone is familiar with certain aspects of your project, but maybe assume everyone has the common background of cybersecurity

Tailor for your Audience

- How to customize a presentation for an audience
 - You may need a customized take-away message, especially if some of your technical concepts and contributions are beyond the level of your audience
 - Customize the amount of background material you provide to set the stage for your take-away message
 - You may need to use different language (e.g., less technical jargon) for a more general audience

Time Constraints

- How much time do you have? How much detail can you include?
 - Your approach to a 10-minute talk may be completely different from that of a 20-minute or 5-minute talk.
 - Some of this comes down to just the time constraint, but much of it is related to your story and the purpose of your presentation
 - Ex: a 5-minute talk may be just to tell people what you're interested in or what you're working on, but a 20-minute talk may be to share some specific results that require more background, exposition, data, details, etc.

Scope

- It's really important to properly scope a talk based on the amount of time allotted, remembering to leave the all-important Q&A time
 - How many main points / concepts can you convey effectively in the N minutes you have?
 - One rule of thumb says a new concept each 5 minutes is reasonable
 - Don't try to squeeze in everything, instead prioritize key concepts
- More on this later

Content

- Once you have a good story that fits your audience and time allotment, you can think about content
 - Specifically, form your story - stories have a beginning, middle, and end
 - These should collectively summarize your scope and goals, main concepts, take-away points, conclusions, etc.
- Content should be presented in an easy-to-absorb manner, typically balancing spoken word with media (more on this soon)

Your Story

- Beginning, Middle, & End
 - The beginning is sort of like the introduction to the paper; it sets the landscape, explains the problem, highlights the challenges, previous work, your contributions, etc.
 - “Tell 'em what you're going to say” [Kschischang]
 - Outline of the key take-away points
 - The middle provides technical details of each key point
 - “Say it” [Kschischang]
 - The end summarizes, recapping the take-away points
 - “Tell 'em what you've said” [Kschischang]

Supporting your Story

- Often, how you present is as (or often more) important than what you present
 - As an example, putting lots of text on slides and then read it to the audience is typically not a good idea.
 - A presentation is a combination of what is on your slides and what you say, and it's pretty easy to make your slides and your spoken word complement each other

The Value of an Outline

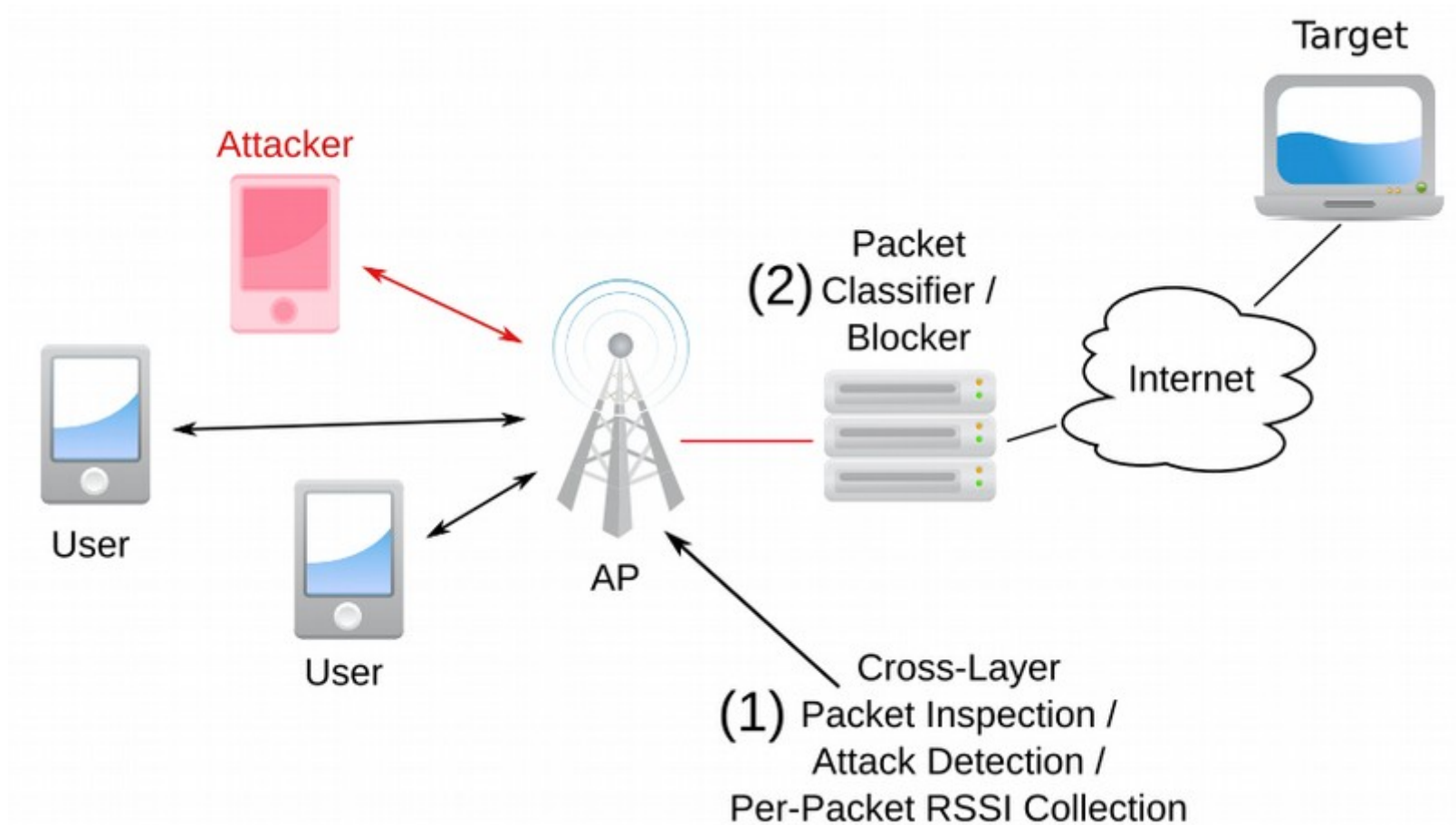
- Having an outline can be a helpful way of relating what you're saying to your specific take-away points. For example:

- Problem Statement
- Take-away Point 1
- Take-away Point 2
- Take-away Point 3
- Discussion and Summary

Visual Aides

- Graphics / visuals / figures / images / whatever you want to call them are extremely important
 - “A significant portion of your talk preparation will include preparing the appropriate visuals.” [Feamster]
- Using graphics is great but can get dangerous
 - Visuals are there to support what you are saying
 - If it's easier to express an idea with a figure, use a figure
 - If it's easier to express an idea with words, use words
 - Animations, videos, etc. can be especially dangerous

Example

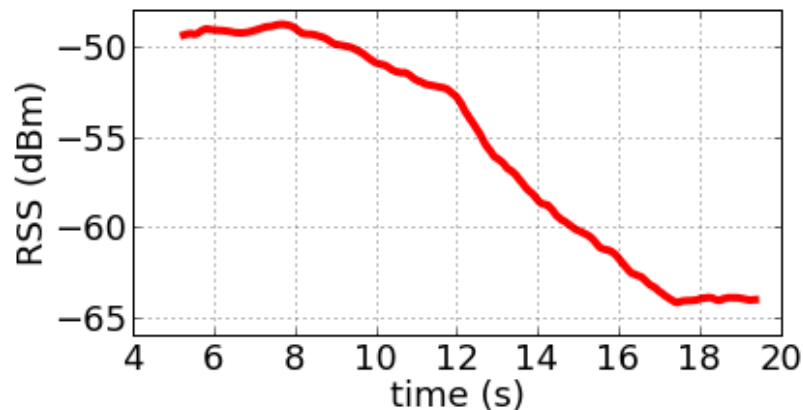


Example

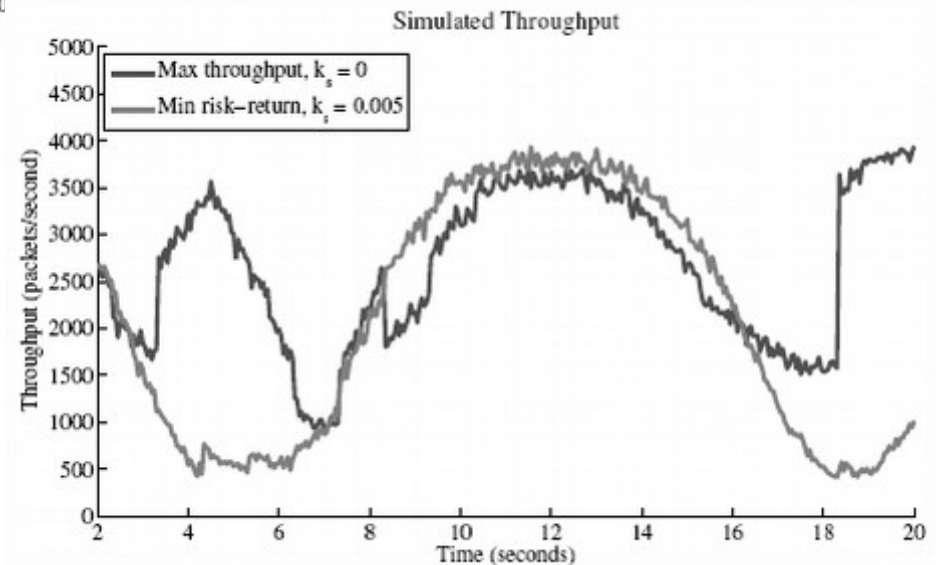
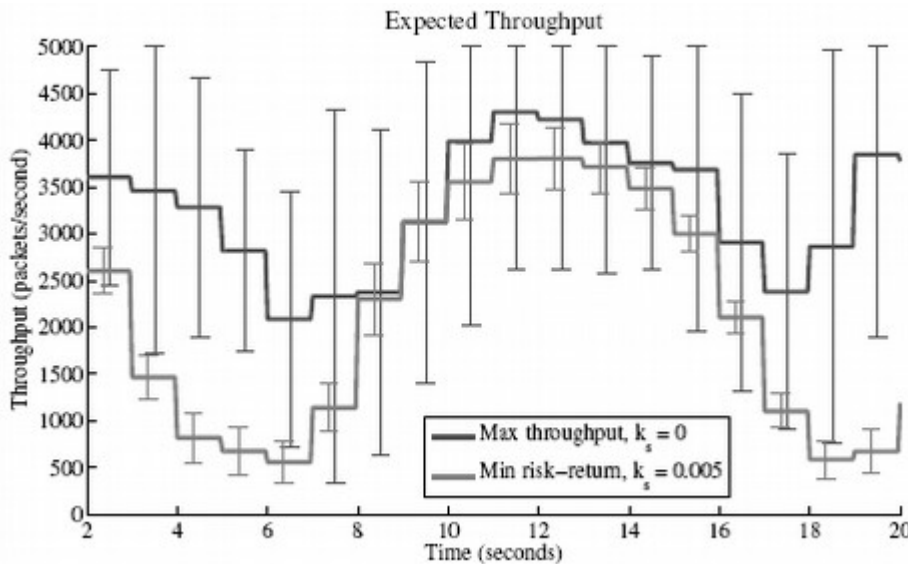
**Stationary
recorder**



**Visual and RF
observations**



Example



Anything Else?

- There are a lot of presentation tips that fall under the category of “Style”. However, most of them are good tips.
 - Ex: don't use small fonts, many fonts or font colors, etc.
 - Why? You want people to pay attention, listen to you, and read the small amount of text on your slides.

The Presentation Part...

- Probably the most important part of a presentation is the part where you're actually presenting.
 - I know this sounds silly, but it's super important. Give immaculate slides to a weak speaker and what happens?
- Much of strong presentation is rooted in preparation and practice
 - Your audience will respect you more if you're well prepared, you don't rush to get through your material in time, you are confident, you appear comfortable, and you speak to your expertise (including saying “I don't know” as appropriate)

Adapting to Time Constraints

Time is not your Enemy

- A lot of presenters get angry when someone gives them a very short presentation window.
 - Many researchers (faculty are particularly bad at this...) will try to cram all their material in whatever time slot they are given
 - This becomes obvious and has negative consequences
 - Audience stops paying attention, lose respect for speaker, etc.

Design for Time

- As mentioned earlier, if the presenter wants to achieve their goals, the audience is very important
- So, how to design a presentation to fit the amount of time given?

Approaching a Short Talk

- Designing a short talk typically requires a different approach compared to a long talk. Some insights from [Van Loan].
 - A short talk is a long abstract - if a one-hour talk corresponds to a paper, then a short talk corresponds to a long abstract. It should communicate without distracting detail.
 - A short talk is a captivating lead paragraph - a quality lead paragraph will determine who reads on. A successful short talk will encourage the listener to follow up.
 - A short talk is a commercial - it is a great occasion to advertise you or your results

Rules of Thumb

- While there's no well-defined way to do this, “rules of thumb” can be helpful guidelines (or at least good starting points)
 - 5 minutes per concept
 - 1 minute per simple slide, more for complex slides
- Combined with good preparation and practice, you can iterate from these starting points and converge to a well-scoped presentation

Some Common Formats

- The most common presentation durations are probably 1 hour, 20 minutes, and 5 minutes.
 - In a 1 hour presentation (really 50-55 minutes), the speaker can go into a lot of detail, closer to “teaching” a topic than just presenting it
 - Typical of a lecture, seminar, keynote address, etc.
 - In a 20 minute presentation (really 15-17 minutes), the speaker can tell a good story and give some deeper details, but not complete
 - Typical of a conference talk, final project presentation, etc.
 - In a 5 minute presentation (really 4 minutes), the speaker is typically just motivating and describing a problem, “giving a pitch”

Some Harder Formats

- The dreaded 10-minute presentation...
 - Since 10 minutes (really 7-8 minutes) is more than enough to make a pitch, speakers are often tempted to provide as much detail as would be in a 20-minute talk

Further Reading

- There's a lot that I didn't touch on. Here are some recommendations:
 - Nick Feamster, “Presenting a Technical Talk”, from his blog “How to Do Great Research: Grad school survival advice from Nick Feamster and Alex Gray”
 - Frank R. Kschischang, “Giving a Talk - Guidelines for the Preparation and Presentation of Technical Seminars”, University of Toronto. (out of date, but lots of good insight)
 - Charles Van Loan, “The Short Talk”, Cornell University.
 - D. Messerschmitt, “Pointers of Giving a Talk”, UC Berkeley.

Questions?