Ad hoc On-Demand Distance Vector Routing

a routing protocol for mobile ad hoc networks

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Outline of the Presentation

Agenda

Establishing routes in mobile ad-hoc networks

AODV tackles the challenge of establishing routes in mobile ad-hoc networks (MANETs) and other wireless ad-hoc networks.

Problems with Traditional routing protocols

Traditional routing protocols, designed for static networks, wouldn't work well in mobile ad-hoc networks (MANETs). AODV, instead,

- uses a reactive approach to route discovery.
- (i.e.) finds a route when a source node needs to communicate with a specific destination node.
- doesn't maintaining unnecessary routes, i.e. conserves resources

It was jointly developed by **Charles Perkins** (Sun Microsystems) and **Elizabeth Royer** (University of California, Santa Barbara) and was first published in the ACM 2nd IEEE Workshop on Mobile Computing Systems and Applications (IEEE/WMCSA) in February 1999.

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What is the solution/contribution

Explain **YOUR** contributions. Go top-down. Give the brief introduction to the contributions at the beginning of the presentation. A slide should have no more than five to six lines of text or bullets. Prefer figures instead of text: A picture is worth a thousand words.

- Communicate the Key Ideas
- Don't get Bogged Down in Details
- Use a Top-down Approach

The audience will remember at most one single message **Which message you want to audience to remember? Can you express this message in less than a minute in an elevator?**

Agenda

Motivation/Importance

"Gain upon solving the problem, pain if not solved" should be explained

Explain why the problem is so important. Throw in a little philosophy if necessary. How does the problem fit into the larger picture? If it involves a model of a real-world phenomenon, then how good is the model? What are its applications? What makes the problem nontrivial? You can return to these issues in the Conclusion, when you can re-address them with the benefit of hindsight.

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Model, Definitions

Formal definition of a Stochastic Process

The use of terminology and jargon should be kept to a minimum, but is impossible to avoid entirely. All terms must be introduced early. It is also useful to remind the audience of the definitions at critical points later in the talk.
Background and this slide can be combined....

Background

Research is not usually carried out in a vacuum. There will almost always be other relevant or related work, which you should describe. Present an orderly synopsis of these previously- obtained results. A table is often used for this purpose. Be sure to mention the author of each paper and its date of publication. **Compare and contrast them with each other and with your paper.**

Agenda

Main Point 1: A Figure

Abstract the Major Results

Describe the key results of the paper. You may present the statements of the major theorems, but not their proofs. You will probably have to get a little technical here, but do so gradually and carefully.

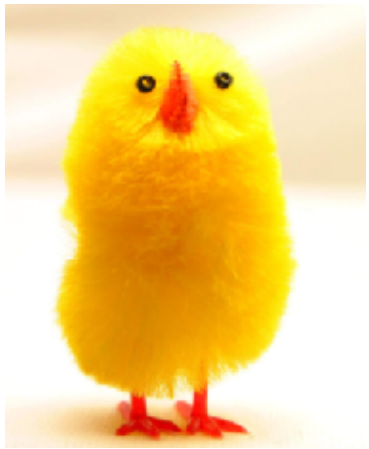

Figure: Awesome Image

An Example Distributed Algorithm

Blind Flooding

Blind flooding on an undirected graph is presented in Algorithm 1.

Implements: BlindFlooding **Instance**: cf
Uses: LinkLayerBroadcast **Instance**: lbc
Events: Init, MessageFromTop, MessageFromBottom
Needs:

OnInit: () **do**

OnMessageFromBottom: (*m*) **do**
1: **Trigger** lbc.Broadcast (*m*)

OnMessageFromTop: (*m*) **do**
2: **Trigger** lbc.Broadcast (*m*)

Algorithm 1: BlindFlooding algorithm

Main Point 2

Explain the Significance of the Results

Pause, and explain the relationships between the formal theorems that you have just presented and the informal description that you gave in the Introduction. Make it clear to the audience that the results do live up to the advance publicity. If the statements of the theorems are very technical then this may take some time. It is time well-spent.

Main Point 3

Sketch a Proof of the Crucial Results

The emphasis is on the word “sketch”. Give a very high-level description of the proofs, emphasizing the proof structure and the proof techniques used. If the proofs have no structure (in which case it may be assumed that you are not the author of the paper), then you must impose one on them. Gloss over the technical details. It is a good idea to point them out but not to explore them.

Agenda

Main Result 1

Choose **just the key results**. They should be important, non-trivial, should give the flavour of the rest of the technical details and should be presentable in a relatively short period of time. Use figures instead of tables instead of text.
Better to present 10% the entire audience gets than 90% nobody gets

Main Result 2

Try a subtitle

- Make sure your notation is clear and consistent throughout the talk. Prepare a slide that explains the notation in detail, in case that is needed or if somebody asks.
- Always label all of your axes on graphs; use short but helpful captions on figures and tables. It is also very useful to have an arrow on the side which clearly shows which direction is considered better (e.g., ”up is better”).
- If you have experimental results, make sure you clearly present the experimental paradigm you used, and the details of your methods, including the number of trials, the specific analysis tools you applied, significance testing, etc.
- The talk should contain at least a brief discussion of the limitations and weaknesses of the presented approach or results, in addition to their strengths. This, however, should be done in an objective manner – don’t enthusiastically put down your own work.

Main Result 3

- If time allows, the results should be compared to the most related work in the field. You should at least prepare one slide with a summary of the related work, even if you do not get a chance to discuss it. This will be helpful if someone asks about it, and will demonstrate your mastery of the material.
- Spell check again.
- Give for each of the x-axis, y-axis, and z-axis
- Label, unit, scale (if log scale)
- Give the legend
- Explain all symbols
- Take an example to illustrate a specific point in the figure

Agenda

Conclusions

Hindsight is Clearer than Foresight

Advices come from [?].

- You can now make observations that would have been confusing if they were introduced earlier. Use this opportunity to refer to statements that you have made in the previous three sections and weave them into a coherent synopsis. You will regain the attention of the non- experts, who probably didn't follow all of the Technicalities section. Leave them feeling that they have learned something nonetheless.
- Give Open Problems It is traditional to end with a list of open problems that arise from your paper. Mention weaknesses of your paper, possible generalizations, and indications of whether they will be fruitful or not. This way you may defuse antagonistic questions during question time.
- Indicate that your Talk is Over An acceptable way to do this is to say "Thank-you. Are there any questions?"[?]

References

How to prepare the talk?

Please read `http://larc.unt.edu/ian/pubs/speaker.pdf`

- The Introduction: Define the Problem, Motivate the Audience, Introduce Terminology, Discuss Earlier Work, Emphasize the Contributions of your Paper, Provide a Road-map.
- The Body: Abstract the Major Results, Explain the Significance of the Results, Sketch a Proof of the Crucial Results
- Technicalities: Present a Key Lemma, Present it Carefully
- The Conclusion: Hindsight is Clearer than Foresight, Give Open Problems, Indicate that your Talk is Over

Questions

THANK YOU

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