Project Assignment
18-759 Wireless Networking, Spring 2016

Course projects are open ended as one would expect in a graduate course. The goal of the course project is to provide depth in a particular area of wireless networking in a hands-on fashion. This handout gives an overview of the assignment.

Platform

Experience shows that the best team size is two students. Teams of three students are allowed, but a more detailed research plan is required. Please contact the instructors before the project proposal deadline if you want to propose a project with a different team size. An example list of projects will be distributed in a separate handout. Your team can pick a topic from this list, or, even better, you can propose your own project.

Here are some things to consider when defining your project:

- The project needs to result in a concrete outcome and should have a research flavor, i.e. it will lead to an interesting result or insight. Ultimately, the primary goal is that you learn something.
- You must have the necessary background to complete the project. For example, do not propose a project at the physical layer if your only background in this area is just the few lectures in this course. Similarly, do not propose a project that involves kernel or driver hacking if you have limited programming experience.
- The project needs to be feasible. For example, the amount of effort must be reasonable given the time available and you must have access to the infrastructure needed to execute the project.

Deliverables

The specific deliverables for the project include a proposal, a design, two check points and a final poster or presentation. All documents should be in PDF format and should be e-mailed to the instructor. All project elements will be graded, except for the proposal document, which will be used to give informal feedback.

Project Proposal - The project proposal will typically be no more than half a page and should include the following information:

- Names of team members;
- Project topic and title;
- A very brief description of your current plans with respect to what you will do and what platform you will use.

Project Design - Project design documents will typically be about two-three pages in length, including appropriate figures. The project design should include the following information:

- Names of team members;
- Project topic and title;
- Description of activities that will be performed as part of the project;
- Expected results;
- Equipment and resources needed;
- Project plan: rough list of milestones, responsibilities of team members, qualifications. For teams that are larger than two, this section should be more detailed.
- Risks and a few words on fallbacks if something goes wrong

**Project checkpoints** - There will be two project checkpoints. Checkpoints are short status reports that cover the following:

- Team information;
- Progress so far: what was completed;
- Any results so far;
- Problems encountered;
- Changes in the project plan.

**Final presentation** - Each team will present a short presentation that summarizes the results of their project in the last week of the semester.

**Platform**

One of the challenges you face is to identify the platform you will use for your project. Here are some possibilities:

- For some projects you may be able to use research infrastructure that is available on campus or your own wireless devices.
- The preferred simulator for wireless networking is ns3.
- A number of wireless testbeds are available on the web. We can explore the options once we have a better idea of your project.

A more detailed list will be discussed in a recitation session at the end of January.

**Milestones**

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<thead>
<tr>
<th>Milestone</th>
<th>Comment</th>
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<tbody>
<tr>
<td>Wed, Feb 1</td>
<td>Project proposal</td>
</tr>
<tr>
<td>Friday, Feb 19</td>
<td>Project design</td>
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<tr>
<td>Th, Mar 17</td>
<td>Check point 1</td>
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<tr>
<td>Th, April 7</td>
<td>Check point 2</td>
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<tr>
<td>Last week of classes</td>
<td>Presentation session</td>
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