

The goal of the reading and presentation components of the course is to expose you to the following aspects:

- Identify a problem
- Do a literature survey (research existing work)
- Reach a conclusion on the difficulty of the problem, how/when can it be solved?
- Presentation: organization of talk, clarity of slides, timing

You need to identify some key problem(s) in secure and robust localization in sensor networks. Examples are how to be resilient to adversaries injecting malicious data in the networks (e.g., sybil attack, wormhole attack), robust localization using HW/SW techniques (e.g., Angle-of-Arrival, Time-of-Arrival, or using mobile robots), broadcast authentication in resource limited sensor networks. The list below covers some of these problems.

Here is a sample presentation outline:

- Title, team name/logo
- Outline of the talk
- Motivation & Context
- Problem Definition & Challenge
- Approaches
- Evaluation Techniques and Results
- Critics & Your Opinion
- Conclusion

List of Papers (to start with)

1. P. Bahl and V. N. Padmanabhan, "RADAR: An In-Building RF-Based User Location and Tracking System", In Proceedings of the IEEE INFOCOM '00, March 2000.
2. S. Capkun, L. Lazos and R. Poovendran, "Rope: Robust position estimation in wireless sensor networks", In Proceedings of the 4th International Conference of Information Processing in Sensor Networks, 2005.
3. L. Hu and D. Evans, "Localization for mobile sensor networks", In the Proceedings of the 10th annual international conference on Mobile computing and networking, 2004.
4. L. Lazos and R. Poovendran, "Robust range-independent localization for wireless sensor networks", Transaction in Sensor Networks, 2005.
5. D. Liu, P. Ning, "Multilevel μ TESLA: Broadcast authentication for distributed sensor networks", ACM Transactions on Embedded Computing Systems (TECS), Volume 3 Issue 4, 2004.
6. D. Niculescu and B. Nath, "Ad Hoc Positioning System (APS) using AoA", In the Proceedings of INFOCOM, 2003.
7. P. Ning, D. Liu and W. Du. "Attack-resistant location estimation in sensor networks", In Proceedings of the 4th International Conference of Information Processing in Sensor Networks, 2005.

8. A. Perrig, R. Szewczyk, J. D. Tygar, V. Wen, and D. E. Culler, "SPINS: security protocols for sensor networks", *Wireless Networks*, Volume 8 Issue 5, 2002.
9. N. B. Priyantha, A. Chakraborty, and H. Balakrishnan, "The cricket location-support system", In *Proceedings of the 6th annual international conference on Mobile computing and networking*, 2000.
10. A. Savvides, C-C Han, and M. B. Srivastava, "Dynamic fine-grained localization in ad-hoc networks of sensors", In *Proceedings of the seventh annual international conference on Mobile computing and networking*, 2001.
11. W.K.G. Seah, K.Z. Liu, M.H. Jr. Ang, J.G. Lim, and S.V. Rao, "Tarantulas: Mobility-enhanced wireless sensor-actuator networks", In *Proceedings of the IEEE International Conference on Sensor Networks, Ubiquitous, and Trustworthy Computing*, 2006.
12. S. Sundresh, Y. Kwon, K. Mechitov, W. Kim, and G. Agha, "Resilient localization for sensor networks in outdoor environments", In *Proceedings of 25th IEEE International Conference on Distributed Computing Systems (ICDCS)*, 2005.