



UCL Department of Computer Science
CS M038/GZ06: Mobile and Cloud Computing
Spring 2014
Kyle Jamieson and Brad Karp

One-pager: Sensor Hints (Ravindranath *et al.*, 2011) Due: Start of lecture, 31st January 2014

Instructions: *in your own words, answer the following questions as succinctly as possible (in 200–500 words total, but shorter answers within this range are encouraged). Quoting figures or text from the assigned reading or from any other source is specifically prohibited.*

The authors describe their own RapidSample bit-rate adaptation protocol in the paper. In Figure 12, they compare the relative throughput achieved when a user walks with a mobile client by RapidSample *vs.* by SoftRate, a different bit-rate adaptation protocol (published in SIGCOMM 2009, “Cross-Layer Wireless Bit-Rate Adaptation,” by Vutukuru *et al.*).

The primary advantage that the authors of this sensor hints paper claim for RapidSample is that it can adjust the bit-rate on a wireless link more rapidly than other approaches. Find the above Vutukuru *et al.* paper (it’s available in several places online). At what timescale does SoftRate adapt to the wireless channel, and how does this timescale compare to that at which RapidSample adapts to the wireless channel?

Which protocol seems more readily deployable in the short term: SoftRate or RapidSample triggered by mobility hints from an accelerometer?

Would you ever expect RapidSample to outperform SoftRate? If so, under what circumstances?