



UCL Department of Computer Science  
CS M038/GZ06: Mobile and Cloud Computing  
Spring 2013  
Kyle Jamieson and Brad Karp

**One-pager: Rateless Spinal Codes (Perry, et al., 2011)**      **Due: Start of lecture, 6th March 2013**

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.

Suppose you were implementing Spinal Codes on a radio whose transmit digital to analog converter provided 12 bits of resolution in each of the I and Q axes.<sup>1</sup>

What values would you choose for  $c$  (the number of bits used in Spinal Codes' deterministic constellation mapping function)? What would be the effect of choosing  $c$  lower than this value? What would be the effect of choosing  $c$  higher than this value?

---

<sup>1</sup>In other words, constellation points passed to the radio front-end for transmission must be represented as a pair of 12-bit numbers.