

ECE471: Embedded Systems – Homework #10
Pi Cluster In-class Reading

Due: **MONDAY 20 November 2017, 1pm**

1. Read the Paper

Read the following paper:

A Raspberry Pi Cluster Instrumented for Fine-Grained Power Measurement by Cloutier, Paradis, and Weaver. MDPI Electronics special issue on Raspberry Pi Applications.

<http://www.mdpi.com/2079-9292/5/4/61>

You might want to read the pdf (rather than the HTML version) if only because you won't have to click around to get the figures/tables.

2. Answer the following questions (10pts)

- (a) If you wanted maximum floating point (GFLOPS) performance with one ARM system (meaning, not a cluster), which would you use?
- (b) If you wanted lowest power under load with one ARM system, which board would you use?
- (c) If you wanted maximum GFLOPs/W, which architecture should you use, x86 (Intel and AMD) or ARM?
- (d) If you wanted maximum MFLOPs per dollar, which architecture should you use, x86 (Intel and AMD) or ARM?
- (e) If you were personally building a compute cluster, what type of device would you make it out of? Why?

3. Submitting the Results

Just e-mail me the answers to the 5 questions. Just plain text in the e-mail is fine. Or you can attach the answers as a txt, pdf, or open office file.