

Homework #7

due Wednesday, November 11th, 2009

Notes:

- All essays should be single-spaced, 11-pt Arial font, 1-inch margins, maximum 1/2 page.
- I expect good grammar, spelling, and writing style.
- This assignment will be explained in greater detail during lecture.

Assignments:

1. There are a wide variety of MRI scanners currently on the market, that vary in field strength, bore size, gradient capability, pulse sequences, and of course price! Write an essay about the landscape of human MRI scanners that are currently available. If you notice several systems with similar capability, discuss why. Visit and incorporate information from the websites of the following companies: GE, Siemens, Philips, Varian, Toshiba, Hitachi.
2. There are several possible emerging MRI markets, for which no current product is perfect. Select one of the following options to explore in greater detail (or choose your own, with Prof's approval). Write an essay describing why current products do not precisely fit their needs, what is the closest existing product that fits their needs, and any related engineering challenges that need to be overcome to build the perfect MRI system for this market.
 - (A) Imaging of body fat in obese adults (large subject)
 - (B) Knee imaging in the office of an orthopedist (low cost)
 - (C) Imaging during a surgery (physical access to the subject)
3. (Extra Credit) Interview a full-time professional working in a field related to MRI (e.g. MRI technician, Service Engineer, Sales/Marketing, MRI researcher, Radiologist). Write an essay about their job and personal experiences. Be sure to include (1) their job activities and responsibilities, (2) their training background, (3) how they got involved with MRI. I can provide contacts if needed.