Directed Study Plan

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Topics of interest:

1. Hardware Experience
   - How to characterize it
   - Gain a better understanding of devices and their purposes
     - i. Look at the Cisco Site - find highlighted products
   - Know how to review and understand device specs
   - Be able to compare and contrast similar systems by different companies
     - i. Web search about competitors in specific areas
   - Be able to get a customer's specifications and design a hardware configuration to meet the requirements
     - i. Read some case studies
   - Understand how various devices interact with each other
   - Wireless devices
   - A lot of hands on experience since I have none

2. Cisco Products
   - Research and learn more about the most popular or newest Cisco Technologies
   - Understand how they work and possibly compare them to competing companies products.

3. Networks
   - More detailed understanding of how to setup a network
   - How to set up a network of wireless devices
   - How to set up an internal network and understanding how to determine what hardware will be needed for it and how powerful that hardware must be
     - i. Ex: Setting up Amazons networks vs Clarkson's
   - How to analyze the traffic or load on a network and how to use that data
   - Gain more knowledge on Virtual Machines.
   - Voice and Video over IP
     - i. Know how it works, what is needed for it, what kind of network loads they have
   - Learn more on Mobile phone networks and what is required (especially hardware wise) to make them work.
   - Data Centers

4. Security for a network
    ○ What is the hardware's role in being secure?
    ○ Denial of Service Attacks
        i. http://www.foxbusiness.com/personal-finance/2010/12/20/amazoncoms-success-wikileaks-attack-proof-cloud-safety-businesses/
        ii. Understand why the attack here on Amazon was not successful
        iii. What is a Honeypot and how do they work?

5. Cisco Certification (CCNA)
    ○ Find out what is entailed / what I will be tested on
    ○ Determine what I can start studying to prepare for this

6. Read Papers - http://conferences.sigcomm.org/sigcomm/2010/conf-program.php
    ○ Data Center TCP
        i. http://ccr.sigcomm.org/online/?q=node/668
    ○ MobiHeld 2010
        i. http://conferences.sigcomm.org/sigcomm/2010/mhcfp.php
    ○ Green Networking
        i. http://conferences.sigcomm.org/sigcomm/2010/gncfp.php
    ○ Design and Implementation of an "Approximate" communication System for Wireless Media Applications
        i. http://ccr.sigcomm.org/online/?q=node/672
    ○ Symbiotic Routing in Future Data Centers
        i. http://ccr.sigcomm.org/online/?q=node/669
    ○ Cloudward Bound: Planning for Beneficial Migration of Enterprise Applications to the Cloud
        i. http://ccr.sigcomm.org/online/?q=node/653
    ○ DONAR: Decentralized Server Selection for Cloud Services
        i. http://ccr.sigcomm.org/online/?q=node/654
    ○ NetFence: Preventing Internet DoS from Inside Out
        i. http://ccr.sigcomm.org/online/?q=node/652
    ○ Detecting Performance Impact of Upgrades in Large Operational Networks
        i. http://ccr.sigcomm.org/online/?q=node/648
    ○ R3: Resilient Routing Reconfiguration
        i. http://ccr.sigcomm.org/online/?q=node/649
    ○ Scalable Flow-Based Networking with DIFANE
        i. http://ccr.sigcomm.org/online/?q=node/644
    ○ The Little Engine(s) that could: Scaling Online Social Networks
        i. http://ccr.sigcomm.org/online/?q=node/642
    ○ An Analysis of Social Network-Based Sybil Defenses
        i. http://ccr.sigcomm.org/online/?q=node/643