Gaming your Career
Using Online Challenges to Develop Yourself and Your Career

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My Background

I've been playing in CtFs (Capture the Flag) events for a decade
- Played in the Defcon finals for the past three years (Shellphish)
- Collegiate Cyber Defense Competition
- Many CtF's available, see CTFTime.org

I've been writing CtFs since 2008
- NetWars
  - Continuous
  - Cyber City
  - Tournament
- Other local, small CtFs
- My title includes NetWars Architect
Overview

Why do this?
What can you do?
Cyber City
Motivation

- You will never learn if you don't try!
- "Hands-on exercises not only reinforce the concepts of lectures, they also give you skills you can apply directly in your day-to-day job" ~Ed Skoudis
- You can try…
  - At home
  - On your schedule
  - In your underpants
- Find what interests you
- Use this to get better at what you love to do!
Fear

Top reasons people tell me why they don't try these challenges

- I won't do well
- I don't know what I'm doing
- I don't play games
- Games are "childish" or "beneath" them
- None of us knew how to do this stuff until we tried it
- There are a lot of people willing to help; ASK!
- There are lots of resources available online
  - Google
  - Chat rooms
  - Email Lists
  - Forums
Gamification

According to Wikipedia, Gamification can be used in “encouraging users to engage in desired behaviors, by showing a path to mastery and autonomy, and by taking advantage of humans' psychological predisposition to engage in gaming.”

Increasingly this is how learning (and advertising) is done

- Teachers are using this to engage students
- McDonald's Monopoly Game

Scoring and awards encourage progress

Ref: https://blogs.sans.org/pen-testing/files/2012/03/Put-Your-Game-Face-On-1.11.pdf
But I Don't Have Time

- We all have 24 hours in a day
- Work with your employer to give you time to develop your skills
- Pick work projects that feed your interests
- Let's be honest, you may have to give up time for other activities
  - TV
  - Sleep
- What are you doing this evening?
Finding Challenges

- Google
- CTFTime.org
- Google for "SANS Pen Test Poster" and look at the back page
  - A mind map of some of the challenges out there
  - [http://www.amanhardikar.com/mindmaps/Practice.html](http://www.amanhardikar.com/mindmaps/Practice.html)
- Use a product from work and beat it up (with permission)
- Tonight!
Cyber City

- A hands-on cyber range to conduct defensive and offensive training
- Physical kinetic components of a city small scale, 1:87 scale) with real-world control systems and networks
- Four city quadrants: Industrial, commercial, residential, and military
- Streaming video of the kinetic action
- Teaches cyber warriors to recognize and utilize the kinetic impact of cyber missions
- Defense, Analysis, and Offense
Infrastructures Included in CyberCity

- 5 video cameras to see all kinetic action
- Power grid with Siemens, Allen Bradley, & Phoenix contact PLCs
- Water reservoir
- Traffic light system
- Military base with weapon system
- Landing strip
- SCADA-controlled train
- ISP infrastructure (routing, DNS, NTP, trouble-ticket system)
- Bank
- Hospital
- Newspaper (with real-time updates to news)
- Coffee shop (wifi)
- Social networking site
- Much, much more
Conclusions

- You won't get better if you don't try
- Ask for help. There are a lot of people who would love to help out
- Be willing to say "I don't know" or "HELP!"
- This is empowering
- Join us tonight for the challenges