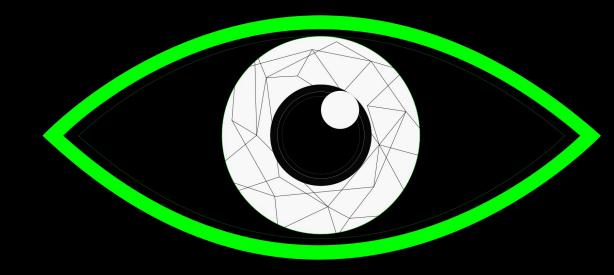
A Netrunner's Guide to CS



Tools, credits, and more to build skills and live in a digital world without breaking the bank

About Me

- Robert Babaev
- 3rd year BCS
- Computer and Internet Security
- Penetration Tester @ SoftwareSecured
- International CTF Player
- VP Events Carleton Cyber Security Club



What's This About?

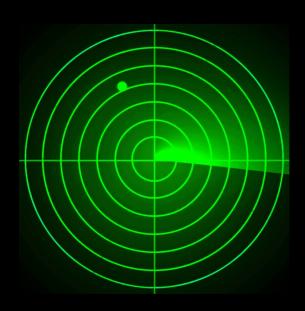
University as a Skill Builder

- University is a good opportunity to build skills
- Access to many resources
 - Courses & Profs
 - Clubs
 - Infrastructure
 - Credits & Discounts

Problem? Some of Them Fly Under the Radar.

Things You Might Not Know About

- Github Student Developer Pack
 - Offers A LOT of stuff
 - Cloud credits
 - Tools
 - Subscriptions
 - o Domains (!)
- Cloud Credits in General
- Open Source Software
 - Multimedia
 - Security
 - Productivity



In the digital world, chances are there's an open source version or a credit for what you want to use.

Github Student Dev Pack

Github Student Dev Pack

- Get Access By Connecting University Email
- Lots of CS students don't know



Github Student Dev Pack - Cloud Credits

- Two Platforms, \$100 each
- Microsoft Azure
 - Virtual Servers
 - Other dev tools (ML, Databases, etc.)
- Digital Ocean
 - App-focused
 - Inexpensive VPS
 - Kubernetes





Github Student Dev Pack - Why Use Cloud?

- It's Super In Demand
- Allows you to show off projects
- Gives hands-on practice with setting up servers
 - Security protocols, SSH keys, ports
 - DevOps market is big right now
- Azure is 2nd most popular Cloud provider
 - What about AWS, GCP?



Github Student Dev Pack - Tools & Subscriptions

- Canva 12 months of Pro
- Jetbrains Free annual subscription for students
- Termius SSH Client that syncs data
- MongoDB \$50 in Atlas, free cert valued at \$150
- Testmail.app Free essential plan while you're a student
- Tons of course sites and educational content





Github Student Dev Pack - Domains

- No one's gonna remember 141.125.23.62 or potato-salad-1487.herokuapp.com
- They're gonna remember a domain!
 - E.g. robertbabaev.tech
- Domain Providers (1 Year Domain + SSL)
 - Namecheap (.me)
 - .TECH (.tech)
 - Name.com





GitHub Student Dev Pack - GitHub

- GitHub Pages
 - Put the domain to use
 - Static website hosting
- GitHub Pro
 - 3000 minutes of GitHub Actions
 - Open Source Security measures (Required reviewers, etc.)
 - Wikis



Cloud

Cloud Credits

- AWS Educate: \$75 \$200 (Carleton students get \$200)
- Google Cloud: \$300 for 90 days for new users
- Linode: \$100 to sign up with select YouTube Sponsorships
 - "You Need to Learn Kubernetes RIGHT NOW!!" NetworkChuck
- Oracle: \$300 for 30 days
- Research limitations



DIY Minecraft Servers



- Oracle Cloud FREE
 - ARM Server (you get up to 4 for free)
 - Up to 6 CPUs, 24 GB RAM per instance
- Why A Minecraft Server?
 - Linux server
 - Networking
 - Community administration
 - Security (a little)



SCS Infrastructure

- Openstack VMs FREE to Carleton students
 - GREAT way to host open source projects
 - Must be publicly available
 - Must have an SCS account
 - Really beefy VMs
 - Up to 16 CPUs, 64 GB ram
- Don't try to use these for a Minecraft server



Open Source

Why Open Source?

- Open Source software is free far more often than not
- Code is free to view
 - Check to see if it's malicious before downloading
- No mess of trial version software
- Contributing!
 - Like a project? Fix some bugs or add some features!
 - Demo skills, start your own project
 - Initiative
 - Collaboration



Finding Solid Open Source

- Search for "Open Source X" not "Free X"
- Recently maintained (ideally within the last year)
- The more stars, the better
 - React has 171k stars
- Do some research
 - Has anybody else used the app?
 - Does it appear in any articles?

- Media Editing
- Code Editing
- Security

Media Editing - Adobe/Microsoft Is Not The Only One

- Video Editing DaVinci Resolve
- Photo Editing Gimp
- Audio Editing Audacity (be careful)
- Vector Editing Inkscape
- Video Recording OBS
- Documents Libreoffice Writer
- Presentations Libreoffice Impress
- Spreadsheets Libreoffice Calc













Code Editing - VSCode

- VS Code
 - Integrated Terminal
 - Advanced debugging
 - More IDE than code editor
 - VS Liveshare



Code Editing - Atom

- Atom
 - Lightweight
 - Watch out adding multiple extensions
 - More text/code editor than IDE



Security - Password Manager

- You NEED a password manager in CS
 - Passwords getting easier to crack
 - Passwords are hard to remember
- Dashlane is popular for sponsorships
 - Closed source (\$40/year premium)
 - Limiting trial (50 passwords on one device, no sync)



Security - Password Manager

- Open Source options
 - Bitwarden (powerful, feature-rich, wide reach)
 - KeePass (mature, reliable, extensible, Windows support)
 - KeePassX (cross-platform fork of KeePass)
 - Psono (team-oriented, web-based)



(Also use a master pass-sentence instead of a master password)

Security - Password Manager

- Some may be scary! (Can't lose password)
 - Settings to enter frequently
 - One password manages everything

Security - Authenticator

- 2FA is crucial
 - Data breaches
 - Phishing
- SMS Not Great
 - SIM hijacking
 - Sometimes it's the only thing available
- Authenticator Apps
 - Google Authenticator
 - Microsoft Authenticator
 - Twilio Authy



Security - Authenticator

- Problems
 - Closed source
 - Owned by large companies
- Open Source Alternative
 - o privacyIDEA (1.2k stars)



Security - File Encryption

- Probably have at least one file to hide
- Windows Encryption is not very accessible
 - At least, not on 10
- Does come by default on Linux
- Mac???
- Typical Options
 - NordLocker
 - CryptForge

Security - File Encryption

- Open Source Options
 - VeraCrypt (cross-platform, hidden volumes, nested encryption)

VeraCrypt

GNU Privacy Guard (remote backup, PGP implementation)

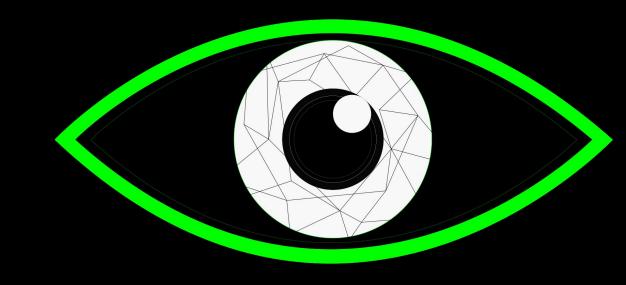
Security - Cloudflare

- Remember those domains from the Student Dev Pack?
- Cloudflare has free SSL and domain migration
 - D/DoS mitigation
 - Easy DNS
 - Universal SSL cert



Don't spend money on stuff you don't have to.

Thanks for Listening



Got questions? @EnderTheNetrunner#8030 robertbabaev.tech/contact