

# Vi Grey

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## LANGUAGES AND TECHNOLOGIES

- Go, Python, PHP, 6502 ASM, Z80 ASM, Bash, Javascript, HTML, CSS, JSON, XML, Brainfu--
- Linux, Unix, Windows, CentOS, RHEL, AWS, Unix Permissions, Cron, AngularJS, Node.js, TCP/IP, HTTP, TLS, SSL, SQL, MongoDB, MySQL,  $\text{\LaTeX}$

## WORK EXPERIENCE

### Software Engineer, Technology Researcher, & Speaker

2014 - Present

VG Interactive (Independent) — Rochester, MN/New York, NY

- Created a research lab to actively develop skills and knowledge in modern and historical technology
- Writes and speaks about technology, security, and information theory

### Conference Name Badge Developer

(Contract) 2018-2019

Midwest Gaming Classic — Milwaukee, WI

- Created first name badge for a gaming conference that is a playable game cartridge
- Developed new NES game "Bovinium Quest - Batteries Not Included" from scratch in 6502 Assembly
- Programmed, assembled, and soldered over 600 cartridges by hand
- Created score code system that lets players submit their high scores to an online leaderboard

### Software Engineer & Information Security Engineer

2015

Excel Manufacturing — St. Charles, MN

- Developed sales and support ticket management application to improve sales and support team productivity
- Encrypted database information and hashed passwords with bcrypt to protect data in case of a data breach
- Set up AWS virtual servers to test application deployment before running those applications in production environments

### Web Developer

(Contract) 2015

Toymaker Television (Tymkrs) — Rochester, MN

- Created a website design for desktop with the security requirements of needing to be static and easily maintainable
- Optimized original website design to reduce loading times by more than 75% and allow for dynamic content size

### Systems Administrator & Web Developer

2011-2013

Jon Hassler Theater — Plainview, MN

- Created a web-based box office ticket reservation system to improve work productivity
- Developed and maintained website, increasing page traffic by over 800%
- Managed computer systems and networks to keep business operations functioning

## PRESENTATIONS

- **Bet You Never Played an NES Game like This: Innovating Under Limitations** — Cyphercon 4.0 — Milwaukee, WI 2019
- **I Dream of Game Genies and ZIP Files - Hacking the NES** — HOPE Conference — Manhattan, NY 2018
- **Phishing for Root** — DEFCON 201 Technical Meeting — Hoboken, NJ 2017
- **Fair Results From an Unfair Coin** — NYC Python Lightning Talks — Manhattan, NY 2017
- **Attacking Your Two-Factor Authentication** — K-LUG Technical Meeting — Rochester, MN 2017

## PROJECTS

<b>GB/NES/HTML/PDF/ZIP Polyglot File</b>	2019
<ul style="list-style-type: none"><li>• Gameboy ROM that is also a functioning NES ROM, HTML file, PDF file, and ZIP file that contains the file's full source code</li></ul>	
<b>Brainfu-- Programming Language Interpreter on NES Cartridge</b>	2018
<ul style="list-style-type: none"><li>• Interpreter for the Brainfu-- programming language that can be played on an NES using a standard NES controller</li></ul>	
<b>NESZIP</b>	2018
<ul style="list-style-type: none"><li>• Proof of concept tool that makes an NES ROM that is also a ZIP file that contains a copy of its own source code</li></ul>	
<b>3F.py</b>	2017
<ul style="list-style-type: none"><li>• Python script that takes 2 different types of files and creates a file that is simultaneously a functioning version of both files</li></ul>	
<b>Modem-Tap</b>	2017
<ul style="list-style-type: none"><li>• Middleware audio engine written in Go that emulates a network connection though a Bell103 dial-up modem</li></ul>	
<b>Personal BBS</b>	2017
<ul style="list-style-type: none"><li>• Online Bulletin Board Service written in Go — <code>telnet vigrey.com</code></li></ul>	
<b>Root Phisher</b>	2017
<ul style="list-style-type: none"><li>• Proof of concept Bash script that pretends to be the sudo password prompt and deletes traces of itself</li></ul>	
<b>ignis</b>	2015
<ul style="list-style-type: none"><li>• Scripting and templating engine written in Python for generating static websites</li></ul>	
<b>Latchbox</b>	2014
<ul style="list-style-type: none"><li>• Password manager written in Go that uses a console based user interface</li></ul>	
<b>rcube</b>	2013
<ul style="list-style-type: none"><li>• Python module that solves scrambled Rubik's Cubes</li></ul>	
<b>datecalc</b>	2012
<ul style="list-style-type: none"><li>• Python module that can calculate the day of the week for any date (Ported to Go, Ruby, and Javascript)</li></ul>	

## COMMUNITY WORKSHOP MEMBERSHIPS

• <b>DEFCON 212</b> — Makerspace — New York, NY	2018 - Present
• <b>DEFCON 201</b> — Makerspace — Hoboken, NJ/Jersey City, NJ	2017 - Present
• <b>The Rabbit Hole</b> (Operated by the Tymkrs) — Makerspace — Rochester, MN	2013 - Present
• <b>K-LUG</b> — Linux User Group — Rochester, MN	2016 - 2017

## PUBLICATIONS

• <b>Concealing ZIP Files in NES Cartridges</b> — Proof of Concept or GTFO Issue 0x18, 4, pp 17-21	2018
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