

Software Languages and Technologies

Go, Python, 6502 ASM, Javascript, PHP, Lua, Haskell, Bash, HTML, CSS, JSON, YAML, XML, SQL, Markdown
Linux, Unix, Windows, CentOS, RHEL, Unix Permissions, Cron, TCP/IP, HTTP, TLS, SSL, SSH, MySQL, KiCAD

Work Experience

File Format Development Team Lead

(Volunteer Staff) 2021 - 2023

TASBot L3C – Remote

- In charge of creating and writing documentation for a custom open standard file format for storing data that can be used by Tool Assisted Speedrun (TAS) replay devices to play a TAS on physical video game console hardware
- Wrote software tools to create files in this custom file format

NES Care Package Creator

(Commission) 2018-2019

Client: Dan Kaminski

- Created nearly 200 care packages that included a custom box, NES cartridge, NES game console, and a letter
- Designed the custom box, NES cartridge label, NES cartridge instruction manual
- Handled the logistics of assembling and shipping the nearly 200 care packages
- Developed the software for the NES cartridges and programmed all of the EPROM chips on the cartridges by hand

Conference Name Badge Developer

(Contract) 2018

Client: Midwest Gaming Classic

- 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

Web Designer and Developer

(Contract) 2015

Client: Toymaker Television (Tymkrs)

- Created a website design for desktop with the design 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 and Web Developer

2011 - 2013

Jon Hassler Theater (Rural America Arts Center) – 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

vigrey.com/presentations/

Bet You Never Played an NES Game Like This: Innovating Under Limitations

2019

Cyphercon 4.0 – Milwaukee, WI

vigrey.com/presentations/2019-04-12-cyphercon.pdf

I Dream of Game Genies and ZIP Files - Hacking the NES

2018

The Circle of HOPE Conference – Manhattan, NY

vigrey.com/presentations/2018-07-20-hope.pdf

Phishing for Root (How I Got Access to Root on Your Computer With 8 Seconds of Physical Access)

2017

DEFCON 201 Technical Meeting – Hoboken, NJ

vigrey.com/presentations/2017-10-20-defcon-201.pdf

Attacking Your Two-Factor Authentication (PS: Use Two-Factor Authentication)

2017

K-LUG Technical Meeting – Rochester, MN

vigrey.com/presentations/2017-06-08-k-lug.pdf

Personal Projects

vigrey.com/projects/

Bindrune – <code>git://git.vigrey.com/bindrune</code>	2024
Go program for generating and signing TLS certificates meant for Trust On First Use (TOFU) systems	
Ham Test Practice FCC – <code>git://git.vigrey.com/ham-test-practice-fcc</code>	2024
CLI testing program written in Go used to study for the Amateur Radio test from the FCC. Used this project to study for and get my Amateur General License.	
Aurgelmir – <code>git://git.vigrey.com/aurgelmir</code>	2024
HTTP server written in Go which serves my website's content with support for port forwarding, request filtering, and static site hosting	
Bifrost – <code>git://git.vigrey.com/bifrost</code>	2023
Monochromatic color palette generator for CSS files that makes color-blind accessible WCAG 2.0 AA and AAA valid palettes	
Huginn – <code>git://git.vigrey.com/huginn</code>	2023
Gemtext to static HTML file converter written in Go	
Weather NWS – <code>git://git.vigrey.com/weather-nws</code>	2023
Program written in Go that accesses the National Weather Service Web API to fetch and display weather forecast data for specified a specified Latitude and Longitude in the United States	
Fulla – <code>git://git.vigrey.com/fulla</code>	2023
CLI based Password and Time-based One-Time Password (TOTP) manager written in Go	
Muninn – <code>git://git.vigrey.com/muninn</code>	2023
Git forge written in Go that builds static Gemtext files	
Bergelmir – <code>git://git.vigrey.com/bergelmir</code>	2022
Server written in Go that serves my site's content over the Gemini protocol	
Syzygy – <code>git://git.vigrey.com/syzygy</code>	2022
Go program that uses formulas from "Astronomical Algorithms, 2nd Edition" by Jean Meeus to accurately calculate the 3D position in space of the Sun, Moon, and a latitude/longitude location on Earth for a given time	
ISS Tracker for NES – <code>git://git.vigrey.com/iss-nes</code>	2020
Project that tracks the International Space Station and displays its location on an NES. This project was written about in a VICE article titled "Hack Lets You Track the International Space Station With an NES".	
Gameboy/NES/PDF/HTML/ZIP Polyglot File – <code>git://git.vigrey.com/gb-nes-pdf-html-zip</code>	2019
Proof of concept file that is simultaneously a valid and functioning Gameboy ROM, NES ROM, PDF file, HTML File, and a ZIP file that, when unzipped, produces the source code for the file	

Community Memberships

TASBot	2018 - 2023
Development Community – Remote	
The Rabbit Hole (Operated by the Tymkrs)	2013 - 2022
Makerspace – Rochester, MN	
DEFCON 201	2017 - 2019
Makerspace – Hoboken, NJ	
K-LUG	2016 - 2017
Linux User Group – Rochester, MN	

Publications

Concealing ZIP Files in NES Cartridges	2018
Proof of Concept or GTFO Issue 0x18, 4, pp 17-21	www.alchemistowl.org/pocorgtfo/pocorgtfo18.pdf