COLLIN GROS

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OBJECTIVE: Secure a full-time position that presents daily challenges and continuous learning opportunities, allowing me to effectively apply and expand my systems-focused security, networking, AI, and automation skills.

EDUCATION

New Mexico State University, 1220 Stewart St, Las Cruces, NM 88001
Bachelor of Science
Computer Science August 15, 2019 - May 15, 2021 (*Graduation)*: **GPA 3.64**

Texas Tech University, 2500 Broadway, Lubbock, TX 79406
Bachelor of Science
Computer Science August 15, 2017 - May 15, 2019

WORK EXPERIENCE (ordered by relevance)

Ricoh USA, 6300 Diagonal Hwy, Boulder, CO 80301
Software Engineer/Linux Systems Administrator September 20, 2021 - Present
Ricoh Boulder - Development Support

- As a member of the Development Support team at Ricoh Boulder, supported development teams in a large, complex ecosystem, working in roles on the AWS SaaS Infrastructure team and on-premise Boulder Development Support team.
- As a member of the AWS SaaS Infrastructure team:
    - Supported customer-facing AWS applications deployed by development teams.
    - Collaborated with the SaaS Operations team to resolve critical alerts, enforce good security practices, remediate security vulnerabilities, and optimize cost across our multi-account AWS organization.
    - Maintained development tooling and cloud infrastructure systems/services critical to the environment:
        - Source code infrastructure
            - GitLab, Elasticsearch, JFrog Artifactory + Xray
        - CI/CD infrastructure
            - Jenkins
        - SIEM, access management, and endpoint security
            - Splunk Cloud + heavy forwarder, Trend Micro Deep Security/Cloud One Endpoint and Workload Security, MSAD, IAM Identity Center SSO
        - AWS infrastructure
            - Organizations, IAM, CloudFormation, VPC, Route53, Config, CloudTrail, CloudWatch,
    - Leveraged Infrastructure as Code deployment of AWS resources via CloudFormation and AWS CLI+SDKs.
    - Automated various processes:
        - Utilized State Machines/Lambdas with Python to automate system updates
        - Logging of system health and metrics via Bash and the APIs belonging to our applications
        - EC2 AMI hardening (up to CIS benchmark specifications) and Linux image updates via EC2 Image Builder
    - Supported backup and disaster recovery processes via S3 (Glacier Deep Archive) and AWS Backup, and regularly performed disaster recovery tests.
    - Migrated critical development tooling and infrastructure systems to a new Linux OS, collaborating with development teams to ensure minimal impact on development.
    - Regularly performed system maintenance as necessary outside of normal working hours during a maintenance window.
    - Reviewed and enforced standard security practices (least privilege, scope, other conventions) on all IAM roles and policies deployed across AWS environments.
    - Collaborated with third-party vendors/application support teams to resolve time-sensitive critical issues pertaining to applications.
    - Utilized application APIs for troubleshooting, resource optimization, monitoring, and automation purposes.

    - Created clear documentation/procedures for various team processes and problem resolution, utilizing Atlassian Confluence, and reviewed with team members to ensure adequate coverage of responsibilities.
    - Regularly worked through tasks with Agile software development methodology (Kanban) via status reports in daily standup meetings, and consistent grooming and prioritization of user stories and bugs.
    - Thoroughly documented steps, issues, important notes, and discoveries on Atlassian Jira issue-tracking software.
    - Managed dockerized applications.
- As a member of the on-premise Boulder Development Support Team:
    - Identified a solution for the development support team's issue with configuration management/security auditing at scale, pitched the solution to company executives, and implemented that solution (key components - Ansible, Jenkins) by mentoring an intern through the entire project, closely working with them to stand up the solution and complete documentation, which concluded with her presentation of the results to executive stakeholders.
    - Supported engineers in both software and hardware development, utilizing experience with Linux and AIX OS internals and technologies such as DNS, NTP, DHCP, LDAP, Kerberos, PAM, SSH/SFTP, FTP, TLS, NFS, SMTP, PKI, SMB, and AFS.
    - Installed, configured, and continually updated and patched a variety of Linux distributions and AIX systems for development and infrastructure use.
    - Migrated various Linux systems to supported OS'es as production OS'es went out of support (CentOS 6 to CentOS 7, CentOS 7 to Rocky Linux 8/9).
    - Ensured compliance of development and infrastructure RHEL systems through licensing tracking processes.
    - Created clear documentation for team processes, tools, troubleshooting, handling user-reported issues, topics sprouting from employee turnover, with a particular focus on documentation of team "tribal knowledge".
    - Administered VMware vCenter, vSphere, and ESXi systems to support system virtualization, user workstations, and on-premise development infrastructure.
    - Provided quality development support for user-reported issues involving hardware, software, networking, and applications.
    - Supported the team and development environment during scheduled and unscheduled on-premise power outages.
    - Administered various critical network services, such as DNS/NTP servers and DNS record changes, mail servers (Postfix), proxy services (Squid), HTTP servers (Apache), and reverse proxy (NGINX).
    - Implemented and maintained enterprise hardware equipment, including rack-mounted and tower servers, SAN fabric infrastructure, network infrastructure, supporting new installations and hardware retirements as necessary.
    - Administered and monitored on-premise backup and data protection infrastructure (Bacula, TSM, mksysb, XSIBackup).
    - Automated repetitive data and system management functions using scripting knowledge and tools such as: Ansible, Bash, Python, PowerShell, REST APIs, and VMware PowerCLI.
    - Heavily used version control systems (git, subversion) in development and support of solutions/infrastructure.
    - Assisted the network team as necessary, with needs driven by user-reported issues and development infrastructure.
    - Supported in-house development tooling and hardware+software asset inventory software, as well as Redmine, FTP, and Subversion servers.
    - Administered user access, following processes to grant/revoke user access to appropriate systems/services.
    - Implemented custom Bash and Python scripts to monitor various aspects of the environment, such as user ID allocation, user access, and storage usage.
    - Investigated and remediated security vulnerabilities, referencing Linux distribution errata pages and applying configuration changes to development servers, as alerted to us by security engineers.
    - Prioritized work related to various company-driven objectives, which included:
        - Identifying candidates to move to AWS and reduce on-premise footprint.
        - Increasing use of virtualization.
        - Automating time-consuming/mundane processes where applicable.
        - Upholding network and environmental security through EDR agent deployment.
        - Minimizing development tooling outages to ensure product development teams can focus on their software/hardware development.
        - Assisting with intern selection and intern project management with a goal of keeping them on board after they graduate to grow our team.
- Participated in 24x7 on call support for both AWS and on-premise development environments.
- Communicated effectively through excellent verbal and writing skills.

New Mexico State University, 1110 S Horseshoe, Las Cruces, NM 88001
Undergraduate Employee/INCA CubeSat Programmer September 15, 2019 - May 15, 2021

- Worked with a team of fellow students to program a satellite composed of several single-board Linux computers and custom built components.
- Learned extensively about testing procedures, embedded systems programming, programming practices and concepts (PEP8, Linux Kernel Coding Style, state machine), various networking components (TCP/IP, ARP, AX.25 radio, MAC addressing, Linux network diagnostic tools), programming and scripting languages (Python, C/C++, Perl, Bash), Linux Administration components and tools, version control tools (git), deadline and work management, and software development teamwork (integration testing).
- Attended and contributed at formal weekly meetings with the entire Communications and Data Handling team.
- Wrote low-level Linux drivers for various devices (e.g., Fuel Gauge, UHF Radio) in C/C++.
- Diagnosed radio transmission and Linux network configuration issues with multiple Linux machines.
- Expanded knowledge independently in a timely manner by efficiently searching the internet, as well as other sources.

North Dakota State University, 1320 Albrecht Blvd, Fargo, ND 58102
Cybersecurity Intern/Research Experience for Undergraduates May 31, 2018 - August 3, 2018

- Learned how to conduct research in the computing field of Cybersecurity.
- Structured and programmed a testing and data analysis procedure in an effort to find facial recognition flaws in current recognition methods.
- Sharpened Python/Bash skills from testing and data analysis programs.
- Collected a dataset of 16,725 images from 31 male participants' faces in collaboration with fellow interns to train a classifier in Python/OpenCV.
- Datasets are published on Elsevier to aid further facial recognition research.
- Attended a cybersecurity conference and participated in a Capture The Flag (CTF) competition.

PROJECTS/OTHER EXPERIENCE

Personal Home Lab/Other Experience August 1, 2018 - Present

- I've set up a game development environment for my family and friends to use while we work on creating a computer game in the Godot game engine - it consists of a self-hosted OpenVPN server, LDAP server, git repository manager (Gittea), and issue tracker (Redmine). I've been experimenting with Docker and Podman and have containerized as much as possible.
- I manage a WordPress website for my family for our recipes.
- I self-host a large Linux file server that acts as a NAS (SFTP, Samba) and use Jenkins+Bash and Python for running miscellaneous projects on my data playground.
- I've secured my house with my own CCTV Camera setup that consists of old smartphones acting as ip cameras, an old laptop with a large HDD and Linux, an old router, and my own Python/OpenCV program that records the surveillance footage and saves data under time stamped files.
- I've set up a Raspberry Pi 4B as a DNS sinkhole connected to my home modem.
- GPU-Passthrough on Linux (Ubuntu 18.04) to a Windows VM using Qemu-KVM for utilizing Windows-exclusive gaming on Linux.

School Projects

"PAM" [C#, Unity] Senior Capstone Project (NMSU) January 15, 2021 - May 15, 2021

- An application to help domestic violence victims get help or services, discreetly.
- Consists of two main components: a game, and a survey, where a domestic abuse victim can download this app and discreetly switch to a secret menu to fill out a domestic abuse help survey while the abuser isn't looking.
- Worked with a team of seven and split up tasks between two sub-teams: a UI/UX team, and a Game dev team.
- Helped as a member on the UI/UX team by working on the survey backend (PDF Generation, google drive API, MongoDB interfacing, Microsoft Azure app functions, .NET development).
- Needed further development at the end of the semester, so the project was passed down for future students to work on it.

"UDP CHAT" [C] Class Project (Computer Networks I, NMSU) August 15, 2020 - December 15, 2020

- Runs as a client or server and communicates through Linux sockets.

"NAVIGATION" [C/C++] Class Project (Data Structures, NMSU) August 15, 2019 - December 15, 2019

- Calculates the route to take to travel the shortest distance given any two coordinates on Earth.

"CHESS SOLVER" [C/C++] Class Project (Data Structures, TTU) August 15, 2018 - December 15, 2018

- Determines the exact moves required to win a game of chess, given any "winnable" chess scenario.

SKILLS, HIGHLIGHTED CLASSES, AND INTERESTS

Technical Skills

- Computer hardware
- Network hardware
- Linux, AIX, and Unix knowledge
  - Configuration
  - Process control
  - Input/Output
  - Kernel
  - Logging
  - Filesystem
  - Administration
  - Troubleshooting
  - Resource management
  - Network
  - Common programs
  - Security
- Linux distribution knowledge
  - RPM-based (RHEL, Rocky/Alma, Amazon Linux, CentOS, openSUSE, SLES)
  - DEB-based (Ubuntu, Debian)
- Windows knowledge
  - Process control
  - Configuration
  - Troubleshooting
  - Resource management
  - Security
- Cloud
  - AWS
    - AWS Backup
    - AWS CLI
    - AWS Boto3 SDK
    - Active Directory
    - Billing and Cost Management
    - EC2
    - EC2 Image Builder
    - CodeBuild
    - CodeCommit
    - CloudFormation
    - CloudTrail
    - CloudWatch
    - IAM
    - KMS
    - Lambda
    - Organizations
    - S3
    - SSO
- Virtualization
  - VMware
- Containerization
  - Docker
  - Podman
- Automation and scripting
  - Jenkins
  - Ansible
  - Python
  - Bash
  - Powershell
- Databases
  - PostgreSQL
  - MariaDB
  - MySQL
- Software development
  - Agile methodology
- Programming
  - C/C++
  - .NET
  - Java
  - Python
  - OpenGL
  - HTML/CSS
- Networking
  - TCP/IP
  - ARP

- OSI Model
- Routing
- Switches

Other Skills

- Fast and enthusiastic learner
- Excellent problem solver
- Team player
- *Great* collaboration and communication skills
- Leader
- Hard working and committed

Highlighted Classes

- Linux System Administration
- Programming Language Structure
- Computer Networks I
- Computer Security
- Software Development
- Database Management Systems I

Interests

- All things Linux!
- Automation
- Security
- Open-source
- Networking