$ whoami
Kevin_Mittman

github – @mittman, @oshazard, @justbrowsing, @kmittman

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EXPERIENCE

NVIDIA Corporation – *https://developer.nvidia.com/cuda-downloads*   Jan 2017 – present

Systems Software Engineer III   *May 2020 – present*

· Co-developed a precompiled driver kmod packaging solution with Red Hat engineers to dispense with a compiler on GPU cloud server instances, providing hardening and UEFI secure boot support. Baked in branch switching using modularity streams to support user choice to lock updates to a specific branch, stay up-to-date with branch and kernel, or fallback to DKMS.
· Envisioned Project Triforce, an OverLayFS based state machine for managing repository metadata as atomic transactions. Significant quantitative benefits for CPU, disk, and network resources using a three-pronged approach including stacking mounts with OverlayFS, stateful metadata caching, and incremental snapshots.
· Calendar-based, ShipIt Scheduler, provides program management a centralized dashboard to plan automated deployments with product specific approval and Slack progress notifications. A train model prevents metadata collisions and CDN overhead.

Systems Software Engineer II   *Sep 2018 – May 2020*

· Built ShipIt, an in-house SaaS (Software as a Service) full-stack webUI for managing product releases using a combination NodeJS and Perl backend. Turn-key ease of use to provide management, a reliable data-driven interface populated by JSON.
· Shaped KitMaker, a containerized approach to CI/CD, supporting many products and architectures, by converting monolithic builds into componentized fragments using Artifactory, Vault, and Jenkins to produce customizable and reproducible pipelines.
· Coordinated closely with QA engineers to provide heads-up on upcoming changes, technical consultations and tooling.
· Documented detailed end-to-end pipeline process from source code check-in to release candidate using visuals and diagrams. Frequently demonstrated know-how to present technical specifications to a varied audience by keeping it light and to the point.
· Cross-team maintainer for the NVIDIA Deep Learning repository, handling the logistics of interlaced product releases.

Systems Software Engineer I   *Jan 2017 – Sep 2018*

· Designed AUTOPKG, a fully automated continuous deployment pipeline for packaging of the CUDA SDK for the plethora of supported distributions, platforms and installation formats. My time-tested layered architecture design has freed up resources, contributing to an increased cadence for product releases.
· Deployed a transparent squid proxy to rewrite public URLs for seamless cross-platform internal testing with one-line. Mechanism has saved time and provided assurance that network installers are bit-identical during testing and for public release.
· Maintain CUDA and driver installation packages using Perforce and git for Fedora, RHEL/CentOS, SUSE, Ubuntu, Linux4Tegra (L4T), Windows and MacOS. Strong expertise with rpmbuild and .SPEC files, debuild and control/rules files.

apacman – *https://github.com/oshazard/apacman*   Sep 2013 – Nov 2016
Lead Maintainer of Community Project
· Took over reins of popular BASH-based, package manager for ArchLinux User Repository (AUR)
· Created a configuration file, many new features, and command-line (CLI) flags
· Added Bats unit tests and wrote manpage docs

JustBrowsing Linux – *http://justbrowsinglinux.com*   Feb 2013 – Feb 2015
Founder and Project Manager
· Developed a ChromeOS-like kiosk Linux LiveCD distribution for web browsing
· Custom all-in-one settings control panel with persistence baked into config file
· Modified lock screen with webcam-based intrusion detection
· Wrote calculator, timers webapps and pyGTK keyboard applet

TECHNICAL SKILLS

15+ years of GNU/Linux experience
· Source packaging, Makefiles, porting and maintenance

Command-line and scripting proficiency
· awk/grep/sed, busybox, chroot, nano, ssh, apt-get, dnf/yum

Writing Documentation
· manpages, draw.io, UML, Javadoc, LaTeX, markdown, wiki

Development Tools
· Android Studio, Bats, Eclipse, git, gcc/g++, p4, Scratchbox

Programming Languages
· BASH, Perl, JavaScript, Python, Java, R, C++, C, Racket

Full-stack Web: Back-end and Front-end
· NodeJS, Socket.io, CSS/HTML, Bootstrap, jQuery, XML

Database and Graphics
· MySQL, SQLite, JSON, YAML, Artifactory, ImageMagick

Containers, Virtualization, and Deployment
· docker, podman, nspawn, QEMU, VirtualBox, virsh, Jenkins

PROJECTS

RHEL precompiled – *Co-Developer* `commits 60` 2018 - 2020
· Lead NVIDIA engineer in collaboration with Red Hat engineer
· Precompiled kernel module (kmod) packages - driver @ kernel
· Plugins for dnf and yum package managers for .ko files
 https://github.com/NVIDIA/yum-packaging-precompiled-kmod
 https://github.com/NVIDIA/yum-packaging-nvidia-plugin

GuessWhat – *Core Developer* `commits 84` Spring 2016
· Online Node.JS real-time multiplayer Pictionary game
· Wrote socket.io IM chat with jQuery & Bootstrap theme
· Interfaced JSON API to fetch words, stored in Redis DB
 http://guess-what.cfapps.io

TimeMe – *Lead Developer* `commits 128` Spring 2012
· Task tracking application written in Java SWT
· Developed with Eclipse IDE, git, SRS and UML diagrams
· Data saved to TSV text-file for import into Excel or charts
 https://mittman.github.io/timeme/TimeMe.jar

pyCheckmate – *Developer* `commits 27` Fall 2015
· Python chess end-game AI, 5-ply minimax α–β pruning
· Wrote user interaction and QA test prep for tournament
 https://mittman.github.io/pycheckmate

PrinterPi – *Project Manager* `freelance` Q3 2012
· Fulfilled client request for iPhone printing to USB printer
· Raspberry Pi as CUPS bridge and hostapd WiFi hotspot
· QEMU user mode to run x86 binary drivers on ARM SoC

webGPS – *Developer* `just for fun` Mid 2011
· Parse GPS coordinates from Palm webOS phone via USB
· Client-server model with PHP shim to interface with gpsd
· Mapped wireless Access Points combined with kismet logs

EDUCATION

Bachelor of Science in Computer Science
· California State University, Fullerton   Graduated May 2016

COURSEWORK

· Data Structures · Software Engineering · Open Source Software · Algorithms · Network Security · Web App Design

LEADERSHIP & PRESENTATIONS

Precompiled Kernel Modules & Modularity Streams 2020
· Presented at GPU Technology Conference (GTC) in the Fall

Simplifying NVIDIA Driver Deployments 2020
· Presented at Red Hat Summit conference

Linux User Group – *Founder, President* 2014 – 2016
· Organized events and workshops for CSUF students
 https://linuxcsuf.github.io

Why Linux? Cool Linux Tricks & CLI-Fu 2015
· Presented workshop for over 40 students and Professors
 https://linuxcsuf.github.io/files/why-linux-slides.pdf

CERTIFICATIONS & REPUTATION

Blog: Streamlining NVIDIA Driver Deployment 2020
· Developer blog post announcing pre-compiled kmod package
availability on Red Hat Enterprise Linux 8.x using modularity to
toggle between NVIDIA driver branch streams and profiles.

Triforce: Repository Management 2020
· Submitted abstract to NVIDIA internal conference.
· Significant quantitative benefits including reduced
bandwidth, reduced disk space, and increased velocity.

Jetson Robotics Lab 2018
· Volunteer lab assistant at GTC providing support for topics
such as image recognition, machine learning robotics and deep
learning using CUDA.

Accelerated Computing with CUDA C/C++ 2017
· Completed fundamentals course covering DIGITS

Applied CS with Android by Google 2016
· Certified in 5-day hands-on technical workshop

StackOverflow `reputation` `2,400 pts` `superuser` `top 6%` 2013
· *https://superuser.com/users/243553*

Certificate of Achievement in CIS 2013

Certificate of Specialization in C++ 2013