$ whoami
Kevin_Mittman

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EXPERIENCE

NVIDIA Corporation – *https://developer.nvidia.com/cuda-downloads*   Jan 2017 – present
Sr. Systems Software Engineer   *2020 – present*
· Lead a team of engineers, building a continuous integration and inventory system to improve validation for CUDA-X infrastructure, providing 1-on-1 mentoring, outlining vision and requirements, and overseeing Jira sprint progress.
· Spearheaded GitHub open source package template initiative, rebuilding over a dozen internal repositories with interleaved git history, using mailbox patches to redact sensitive commit messages and communicating with 3rd party contributors.
· Coordinated with stakeholders across timezones to ship several new products on tight deadlines, developing custom installer solutions, and ensuring best practices followed using semantic versioning and identifying package dependencies.
· Garnered a reputation for distilling complex software ecosystems into easy to understand high-level diagrams, writing detailed guide documents, presentations, and visual analysis of release cadence.
· Pilot in charge (PIC) for precompiled driver kernel module packaging solution, co-developed with Red Hat engineers to streamline GPU cloud server instances, kernel hardening and UEFI secure boot support. Baked in branch switching using modularity streams to support user choice to lock updates to a specific milestone, stay up-to-date, or fallback to DKMS. End-to-end automated pipeline, delivering prebuilt bits for each kernel-driver combination, within hours of new kernel or driver release.
· Envisioned Project Triforce, a union mount file-system 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, transformed manual workflows into a data-driven process, providing 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, allowing 1:n shipments at the same time without any prior coordination.

Systems Software Engineer II   *2018 – 2020*
· Built ShipIt, an in-house SaaS (Software as a Service) full-stack webUI for product release management 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.
· Cross-functional liaison to QA engineers, discussing upcoming changes, technical consultations, and writing 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   *2017 – 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