Akshat Agarwal

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Work Experience

Sematext, *Software Engineer* ⧉   Sep 2024 – present | Remote
- Engineered the Service Catalog feature, which provides our customers insights into services running in their environments and their performance. The work included:
  - writing a custom eBPF collector - which hooks onto relevant tracepoint and kprobes - that integrates with the existing Sematext Agent.
  - The features for this collector included: packet based protocol inference (eg. Postgres, HTTP), domain identification using DNS packet tracing, exporting process metrics + metadata, connection tracking.
  - userspace Kubernetes enrichment pipeline (using Informers) to identify which process belongs to which pod.
  - writing the data ingestion pipeline which involved writing Kafka consumers and producers to eventually store the metadata in OpenSearch.
- Writing Kubernetes leader election for the agent to use Leases in place of the deprecated ConfigMaps.

Aurva, *Software Engineer* ⧉   Jun 2023 – Aug 2024 | Bangalore
- Engineered a Kubernetes-aware eBPF (Extended Berkeley Packet Filter) based collector for Aurva, a core-part of the Aurva Dataplane that we provide to our customers providing functionalities such as Egress Monitoring, Database Activity Monitoring, DNS Tracing, SSL Tracing, PII Detection
- This service is running on more than **3000 nodes** (1 collector per node) at companies like Razorpay ⧉ , Jupiter ⧉ and Apna ⧉
- Implemented source microservice resolution using Kubernetes {Pod, Job} Informers
- Wrote a MySQL FSM and client/server protocol parser in order to track connection lifecycle of the client and extract relevant metadata from it.
- Implemented multi-arch builds using Docker BuildKit on Kubernetes
Technologies worked with: eBPF, C, Go, Kubernetes, Rust

Headout, *Software Engineer Intern (Backend)* ⧉   Jan 2022 – Feb 2023 | Remote
- Worked on Manage My Booking which provided customers a self-serving UI to manage their booking and reducing CustomerOps Teams' workload by reducing:
  - Bookings cancelled due to Headout by **74%** (which at **$80K GBV** translates to **$18K** revenue every week)
- Introduced Audio Guide Feature in the Headout App, improving the ratings of top audio guide products by **15%**
Technologies worked with: Kotlin, Java, Spring, Docker

Accuknox, *Software Engineer Intern* ⧉   Jun 2021 – Nov 2021 | Remote
AccuKnox provides a Zero-Trust Run-time Kubernetes Security platform
- Worked on an open-source runtime security enforcement system called KubeArmor ⧉ .
- Worked on a Kubernetes security policy recommendation engine ⧉ .
Technologies worked with: Go, eBPF, Kubernetes, Docker

NixOS Foundation, *Contract Developer* ⧉   Aug 2021 – Oct 2021 | Remote
Summer of Nix was a two month train & work project funded via the European Commission's Next Generation Internet Initiative.
- Packaged Nix Flakes for NLnet sponsored projects like universal-resolver ⧉ and libspng ⧉
- Worked on a Go translator for dream2nix - a generic framework for *2nix tools
Technologies worked with: Nix, NixOS

Open Source Contributions

Nixpkgs, *Package Maintainer*   Feb 2021 – present
I maintain a bunch of packages for Nixpkgs like cilium, tremor, cargo-criterion, dotenv-linter, libspng.

Deno, *Contributor*   Mar 2020 – Feb 2021
Deno ⧉ is a secure runtime for JavaScript/TypeScript
- view my commits for Deno ⧉
- view my commits for the Deno Linter ⧉