Jonathan Jin

Machine Learning Infrastructure Engineer

jonathanj.in me@jonathanj.in linkedin.com/in/jinnovation github.com/jinnovation

Select Experience

Present – 03/2021 | **Spotify** Senior Machine Learning Engineer | New York

Member of ML Platform. Working on Hendrix, Spotify's centralized ML platform. My focuses revolve around: ML governance; cloud-native infra; and SDK development for MLOps.

- Spearheaded the development of the Hendrix Registry as part of company-wide AI/ML governance initiative, delivering a Backstage-based AI system and model card solution, resulting in over 100 models registered by 40 teams company-wide in under a quarter;
- Driving cross-functional collaboration between ML Platform and Data Platform on data- and ML-native lineage solutions to empower responsible AI development, manage costs, and codify org-wide best practices and ML development standards;
- Led multi-quarter promotion of ML Platform's flagship pipeline orchestration product to general availability; collaborated with product and engineering stakeholders across peer teams within ML Platform as well as "power user" teams – other applied ML teams at Spotify – to: define multi-quarter engineering roadmap; provide technical and project leadership/direction. Contributed to an increase in ML Platform adoption of 50% and increase in user satisfaction of 10%.
- Providing ongoing mentorship and support to three junior IC team members, i.e. half of the team's IC makeup; holding bi-weekly one-on-ones with each to: provide technical and career mentorship; help identify potential future ownership areas and unblock existing ones; and address ongoing concerns.
- Bootstrapping early-stage development of centralized, managed Ray infrastructure based on KubeRay for high-performance ML prototyping and experimentation; collaborating with product and engineering leadership to concretize our platform's long-term Ray strategy;

Ray | Kubernetes | Kubernetes Operators | Go | GCP | Backstage | Terraform | Helm | TensorFlow | TFX | Kubeflow | Prometheus | gRPC

01/2021 – 12/2019 | **NVIDIA** Senior Systems Software Engineer, AI Infrastructure | New York

Member of AI Infrastructure. Contributor to MagLev, NVIDIA's AI infrastructure for autonomous vehicle development. Also contributed to Modulus, the deep learning SDK for autonomous vehicle R&D.

- Initiated development of solution for "hybrid data/model parallelism" using a Ray-based parameter server design and Horovod to enable horizontally-scalable multi-task training;
- Co-delivered a Kubernetes-based scheduling mechanism to enable priority access to cluster resources for select use cases, e.g. prep for upcoming external demos, via virtual "resource shares";

Ray | Horovod | TensorFlow | Kubernetes | Helm | gRPC | Bazel | SwiftStack

12/2019 – 08/2018 | **Twitter** Machine Learning Software Engineer | New York

Member of Cortex, Twitter's central ML platform organization. Worked on: workflow orchestration; experiment management/iteration; and overall ML engineering productivity.

- Spearheaded initial integration of TensorFlow Extended (TFX)with legacy Airflow-based orchestration platformto increase agility of workflow development, iterative execution/experimentation, etc.
- Enabled distributed training of TensorFlow models in Apache Mesos from an Airflow pipeline via Deepbird, Twitter's TensorFlow-based model training/evaluating/serving framework

Apache Airflow | Apache Aurora | TensorFlow

Speaking

2022 **TWIMLcon AI Platforms 2022**, "How Spotify is Navigating an Evolving ML Landscape with Hendrix Platform"
2022 **MLconf**, "Empowering Traceable and Auditable ML in Production at Spotify with Hendrix"
2021 **KubeCon + CloudNativeCon**, "Scaling Kubeflow for Multi-tenancy at Spotify"

Skills

Programming Languages	Python, Go, Bash, C++, Java
Machine Learning	Ray, Kubeflow, TensorFlow, TensorFlow Extended (TFX),
Distributed Systems	Kubernetes, gRPC, Docker
Infrastructure Tooling	Bazel, Prometheus, Grafana, M3, Cassandra, Apache Airflow
Cloud Infrastructure	Google Cloud Platform (GCP), Terraform

Education

2015 **University of Chicago**, B.S. Computer Science, B.A. Economics