Jonathan Jin

Machine Learning Infrastructure Engineer

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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; collaborated with cross-functional stakeholders in Legal, Trust & Safety, etc. to define, design, and deliver a AI system and model card solution based on Backstage and Kubernetes-based declarative infrastructure in under a quarter, resulting in over 100 models registered by 40 teams company-wide in less than a quarter;
- Driving cross-functional collaboration between ML Platform and Data Platform on ML-native data modeling and 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, C++, Java
Machine Learning and MLOps	Ray, Kubeflow, Apache Airflow, TensorFlow, TensorFlow Extended (TFX)
Infrastructure and Distributed Systems	Google Cloud (GCP), Kubernetes, Terraform, Prometheus, Bazel, gRPC, Docker

Education

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