Jonathan JIN
Machine Learning Infrastructure Engineer

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EXPERIENCE

Present 03/2021	**Spotify, SENIOR MACHINE LEARNING SOFTWARE ENGINEER, New York** *Member of ML Platform.* ❯ Working on: centralized, multi-tenant ML orchestration infrastructure with Kubernetes and Kubeflow; and user-facing pipeline-authoring SDK based on TFX ❯ Implemented standardized, on-by-default resource quotas to mitigate risk of noisy neighbor effect in centralized Kubeflow clusters ❯ Oversaw comprehensive formalization of SLO-tracking strategy, using Terraform to formalize SLOs in GCP for all clusters in our multi-cluster in reproducible fashion ❯ Spearheaded development of a custom metrics exporter, transforming Kubernetes events into actionable Prometheus metrics to address gaps in our observability/reliability strategy TensorFlow │ TFX │ Kubernetes │ Kubeflow │ GCP │ Terraform │ 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.* ❯ Developing 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" ❯ Authored self-service, reproducible, and traceable workflows to generate "miniaturized" production datasets, enabling rapid iteration/prototyping of training infrastructure refinements Kubernetes │ TensorFlow │ Horovod │ Ray │ 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.* ❯ Core contributor to ML Workflows, Twitter's Airflow-based platform for productionizing ML pipelines ❯ Spearheaded initial integration and cross-compatibility of TensorFlow Extended (TFX) with ML Workflows to 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
07/2018 07/2016	**Uber, SOFTWARE ENGINEER, New York** *Member of Observability Applications. Worked on forecasting and anomaly detection for time series metrics.* ❯ Re-architected time-series metric forecasting pipeline to support concurrent batch backfilling; reduced asymptotic burden on underlying data store by 90% ❯ Extended M3-based anomaly detection platform to support multiple forecasting models; carried out migration to intercommunicating services with zero downtime and full backwards compatibility Go │ Java │ M3 │ Apache Thrift │ Cassandra
07/2016 07/2015	**OkCupid, SOFTWARE ENGINEER, New York** ❯ Contributed to backend service development as part of a 10-person backend engineering team. ❯ Implemented prototype collaborative filtering functionality for matching between prospectively compatible users. C++

SKILLS

Programming Languages	Python, Go, Bash, C++, Java
Machine Learning	Kubeflow, TensorFlow Extended (TFX), TensorFlow
Distributed Systems	Kubernetes, gRPC
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