Tushar Gautam

MS, Computer Science

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SUMMARY

Proclivity towards problem-solving with 6 years of hands-on experience with full-stack product and infrastructure development. At Anoki, I have led the development of contextual video search driving revenues for TV Ad campaigns. Work involved building full-stack product, scalable video streams processing, and designing reliable ML pipeline for processing large-scale datasets. Further, worked on building TV channels recommendation system, core platform libraries and infrastructure setup.
I've hands-on experience with Go, Python, NodeJS, TypeScript, Svelte, Kubernetes, Airflow, Metaflow, GraphQL, gRPC, Databases, Load Balancers and various AWS and GCP services.

WORK EXPERIENCE

Senior Software Engineer - Anoki Inc   **Mountain View, CA, USA | June 2023 – Current**
- Built **full-stack** contextual video search driving business revenues for TV Ad campaigns.
- Implemented processing several hundreds concurrent live TV channel streams with **auto scale-out** capabilities.
- Designed a reliable **ML pipeline** empowering contextual search, processing of large-scale datasets distributed across GPU cluster.
- Developed **recommendation system** for consumer facing product, enhanced user experience with hyper-personalization of TV channels.
- Developed **core platform libraries** for Config Management and Service Discovery mechanisms based on Consul and Kubernetes.
- Implemented GraphQL backends for Content Management & Scheduling.
- Introductory discussions with team on Observability and best development practices.

Skills: Go, Python, TypeScript, Svelte/SvelteKit, Kubernetes, Metaflow, Airflow, Protobuf, gRPC, MySQL, MongoDB, Consul, Presto, Superset, HaProxy, GraphQL, AWS Mediaconvert, AWS S3, AWS Cloudfront, AWS RDS, AWS EKS, AWS ECR, Prometheus, OpsGenie, Grafana.

Software Engineer Intern - PayPal   **New York City, NY, USA | May 2022 – August 2022**
- Added static type safety for GraphQL resolvers based on a schema-first design philosophy, increasing code maintainability.

Skills: TypeScript, GraphQL.

Senior Software Engineer - LG Ads   **Bangalore, KA, India | June 2017 — June 2021**
- 5x latency optimization for a large-scale fingerprint distribution network for Audio Content Recognition system.
- Lead projects in the realm of core platform development with monitoring, logging and distributed storage infrastructure.
- Setup and managed key infrastructure projects: load balancers, and large-scale Spark cluster.

Skills: NodeJS, Python, Airflow, Bash, Docker, MySQL, HDFS, Ceph, Spark, Mesos, Kafka, Ansible, Jenkins, Prometheus, EtcD, HAProxy, Linux firewall.

Google Summer of Code - Python Software Foundation   **Bangalore, KA, India | April 2016 – August 2016**
- Built interactive static code analysis tool with 97% code coverage for frontend and, 100% for backend.
- Presented a workshop on *"Guide to open-source contributions using Git and CI/CD"* at EuroPython conference in Bilbao, Spain.

Skills: Python, AngularJS, HTML, CSS, Git, TravisCI, Docker, Karma, Mocha, ChaiJS, Test Driven Development.

PATENT

- **System For Contextual Searching Using Text Search Terms**   **Feb 2024**

EDUCATION

M.S, University of Colorado, Boulder   **Aug 2021 – May 2023**
B.Tech, National Institute of Technology, Trichy   **July 2013 – May 2017**

RELEVANT COURSES

Advanced Data Structures and Algorithms, Network Systems, Distributed Systems, NLP and Deep Learning, Database, Blockchain

PROJECTS

- **Image Defogging using DDPM** : A generative model leveraging U-Net and a linear noise scheduler to enhance the Foggy CityScapes dataset.   **May 2023**
- **Distributed Config Deployment**: Implementation of fault-tolerant distributed system based on a spanning tree topology.
  [Github], [YouTube]   **Dec 2022**
- **Named Entity Recognition** : Fine-tuned LLMs on a medical dataset achieving F1 score of 0.91, ranked 1st in class.   **Dec 2021**
- **SemEval-2022 Task-4**: Detecting patronizing and condescending language with fine-tuning LLMs. [Github]   **Dec 2021**
- **GitMate**: Contributed bug fixes and new features for ranking bugs in GitMate - an automated code review and issue triaging platform for GitHub projects.   **2016**