# Tushar Gautam
## MS, Computer Science

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## SUMMARY

Proclivity towards problem-solving with over 5 years of full-stack product and platform development. At Anoki, I've led team building contextual video search enabling AI-powered TV Ads targeting. Individual contributions included full-stack development, design & develop scalable video stream recording, and setup reliable ML pipeline for processing large-scale datasets. Further, built Recommendation system for TV channels, core platform libraries and infrastructure setup.

## WORK EXPERIENCE

**Senior Software Engineer - Anoki Inc**                    **Mountain View, CA, USA | June 2023 – Current**
- Built **full-stack** contextual video search application, driving business revenues with AI-powered SSAI.
- Implemented processing of 500+ concurrent live TV channel streams with **auto scale-out** capabilities.
- Designed a **reliable ML pipeline** for deploying multi-modal vector search processing large-scale datasets spanning GPU cluster.
- Developed **recommendation system** for OTT application, 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 to on-board new content providers.
- Managed infrastructure setup for **HAProxy** load balancers, **Presto** distributed SQL engine, **Superset** for data visualization, and **Consul** for application config.
- Introductory discussions with team on best development practices.

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

**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.

**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, Computer Science, University of Colorado, Boulder**                    **Aug 2021 – May 2023**
**B.Tech, Production Engineering, National Institute of Technology, Trichy**                    **July 2013 – May 2017**

### RELEVANT COURSES

Advanced Data Structures and Algorithms, Network Systems, Operating 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.                    **Dec 2021**
- **SemEval-2022 Task-4**: Detecting patronizing and condescending language with fine-tuning LLMs, ranked 1st. [ 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**