Tushar Gautam
MS, Computer Science

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SUMMARY

5+ years of experience with full-stack distributed software design, development, and deployment. In my current role as a Founding Engineer at Anoki Inc, I have led the development of a state-of-the-art contextual video search platform. My work has involved architecting and implementing live HLS stream recording, building scalable distributed systems, and developing a recommendation system that significantly enhanced our content discovery experience. Additionally, I have hands-on experience with Go, TypeScript, Svelte, Kubernetes, Metaflow, GraphQL, gRPC, Load Balancers and various AWS services.

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, Distributed Systems, NLP and Deep Learning, Database, Blockchain

WORK EXPERIENCE

Senior Software Engineer - Anoki Inc   **Mountain View, CA, USA | June 2023 – Current**
- Built **full-stack** contextual video search product driving core business. Added 10x search latency improvements from 10 seconds down to sub-second range with multi-layered caching strategy and GraphQL dataloaders.
- Implemented **HLS** feed recorder which skips **Ads** for 300+ simultaneous TV channels, based on a scale-out architecture.
- Designed a reliable ML infra for **video processing** tasks, distributed across a medium-scale GPU cluster.
- Developed **recommendation system** for TV channel hyper-personalization. Improvements analyzed with A/B tests.
- Maintained **core platform libraries** interfacing with Kubernetes, Databases, and Consul with Service Discovery mechanisms.
- Implemented GraphQL APIs for Content Management & Scheduling.
- Introduced team to latest technologies for big data processing and reporting tasks.
- **Technical lead** in a multi-disciplinary team of a few engineers in close collaboration with Data Science team.

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**
- Improved static type checking for GraphQL resolvers based on a schema-first design philosophy, increasing maintainability.

Skills: TypeScript, GraphQL.

Senior Software Engineer - LG Ads   **Bangalore, KA, India | June 2017 — June 2021**
- 5x latency optimization for a **large-scale distribution network** for Audio Content Recognition system.
- Lead projects in the realm of **core platform development** with observability.
- 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 coala-html, an interactive static code analysis tool with 97% code coverage for AngularJS and, 100% for Python.
- Presented a workshop to guide 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.

PATENT

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

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**: A **fault-tolerant 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, ranking 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**