Animesh Kumar

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Education

University of California San Diego — San Diego, CA
Master of Science in Computer Science. **GPA: 3.9/4.0** — *September 2023 - June 2025(Expected)*

National Institute of Technology Karnataka, Surathkal — Surathkal, India
B.Tech. in Computer Science and Engineering. **CGPA: 9.05/10** — *July 2017 - May 2021*

Skills

Programming Languages: Python, Java, Golang(GO), C++, C, JavaScript, SQL, Shell, HTML, CSS
Frameworks: Docker, Kubernetes, Azure, AWS, React, Spring, CUDA, Grafana, MongoDB, ElasticSearch, REST API
Courses: Operating Systems, Distributed Systems, Advanced Computer Networks, Statistical NLP, Computer Vision, Data structure and Algorithms, Information Security, Distributed Database System, Compiler Design, Differential Programming

Experience

Oracle — Bengaluru, India
Software Developmet Engineer(MTS) — *July 2021 - September 2023*

- Developed asynchronous Java workflows integrated with core OCI Database cloud to bulk upgrade databases and associated clients in 10k+ infrastructures across 50+ cloud regions, resulting in **$100k+ quaterly saving**.
- Integrated a machine learning pipeline in the operations workflow using a XLNet transformer for incident classification and root cause prediction, resulting in **80+ hours per week** of reduced engineering time.
- Implemented a custom rule based pipeline to consolidate incidents into Kafka topics and route critical incidents across multiple teams reducing operation time by **30%** and incident volume by **10%**.
- Engineered an architecture for seamless deployment and validation of patches across **10+ clients**, automating incident closure and IAM policy authentication for infrastructure access, while efficiently aggregating failure log.

Kubernetes, The Linux Foundation — Remote
Intern(Mentee) — *May 2020 - July 2020*

- Collaborated with the Azure Storage team at Microsoft to implement Docker Container Storage Interface(CSI) drivers for SMB servers on Linux and Windows, directly supporting over **1500 Azure Storage** customers.
- Developed gRPC calls and GO pipeline to mount file systems and dynamically provision persistent volumes for docker containers in the Azure Kubernetes Service(AKS) with strong unit and integration tests.

Oracle — Remote
Software Development Intern — *May 2020 - June 2020*

- Deployed a C++ pipeline for Oracle Database Migration for Unicode, analyzing 10M+ lines of logs and integrating automated fallback procedures, resulting in a **90% reduction** in unicode migration incidents.
- Built a framework that generates GQL queries to ingest and analyze Jira change management tickets for database upgrades, processing **2k+ tickets/min** and reducing the approval process latency by **300%**.

Selected Projects

Customized Graph Methods for Patent Approval Prediction *ACL '24*
- Implemented a claim dependency graph model to predict the novelty in patent applications, reducing the timeline by days and outperforming fine-tuned LLMs, like Llama2, Mistral and, GPT-4 with an **AUC of 0.67**.

Loma Open MPI: Distributed Automatic Differentiation *Github*
- Developed a source-to-source distributed automatic differentiation compiler converting native python code base to differentiable C code running on multiple nodes and communicating using Open MPI framework.

GrimoireLab, CHAOSS *Github*
- Expanded open-source analytics tool GrimoireLab on Slack and Gerrit backend, ingesting **10k+ events/min** into ElasticSearch indexes to visualize data in Kibana dashboards used by **100+ Bitergia Analytics** customers.

Cerebro *Github*
- Developed and maintained Cerebro, a distributed DL model selection framework using model hopper parallelism achieving **3x runtime savings** over data-parallel systems and up to **8x memory saving** over task-parallel systems.

Robust Rate Adaptation Algorithm(RRAA) on VANET on ns-3 simulator *Github*
- Developed Robust Rate Adaptation Algorithm in Vehicular Ad hoc networks with map data generated using OpenStreetMap to demonstrate an average **300% increase** in goodput on a dynamic traffic and node failure.