MANU HEGDE

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EDUCATION

Master of Science (MS) in Computer Science & Software Engineering
University of Washington | Bothell, WA   06/2025

Bachelor of Engineering (BE) in Computer Science & Engineering
Dr. Ambedkar Institute of Technology, Visvesvaraya Technological University | Bengaluru, India   06/2019

TECHNICAL SKILLS

Languages: Python, Kotlin, Java, JavaScript, TypeScript; HTML, CSS, Shell Scripting (Bash, Zsh), SQL
Frameworks: ReactJS, React Native, Dropwizard, Springboot, JUnit5, Locust, Mockito, Django, Flask
Technologies: Microservices, Kubernetes, Jenkins, Github Actions, Git, Docker, Linux (Ubuntu, Arch, RHEL), Apache Spark, Elasticsearch, Redis, EventHub, Redux, RabbitMQ, Prometheus, Grafana, SpringBoot, Jenkins, Elasticsearch, Kibana, CI&CD (Continuous Integration & Continuous Delivery)
Databases: PostgreSQL, Azure SQL Server, CosmosDB, MongoDB, Google Cloud Firebase

WORK EXPERIENCE

Graduate Research Assistant, University of Washington, Bothell, WA   11/2023 - Present
- Set up CI/CD using Github Actions and lightweight kubernetes cluster(K3s), reducing deployment time upto 91.6%
- Set up monitoring with Prometheus & Grafana, enabling real-time monitoring and alerts
- Identified and fixed issues like periodic crashes by monitoring resource usages in Prometheus
- Optimized runtime performance of backend services in python django by 29% (saving 600ms+ per request)
- Re-architected APIs to leverage UI data store (Redux) more effectively yielding performance improvement by 27%

Senior Software Engineer (L3), Tekion Corporation, Bengaluru, India   01/2023 - 07/2023
- Co-led the development & launch of Phase-I pilot backend for an e-signing platform targeting 4 major car-dealership groups in the US, resulting in a standardized e-signing experience across Tekion's software products
- Designed & deployed new micro-services in Java for real-time screen-sharing & collaboration facility and a service to regulate the signing process. Also co-refactored 2 existing services, yielding 18% improvement in API response time.
- Recognized for swift execution, simplifying the processes, guiding the team and outpaced launching of features

Data Scientist, Udaan (Hiveloop Technology Pvt. Ltd.), Bengaluru, India   01/2022 - 12/2022
- Developed & piloted model for demand forecasting top 100 items in a Tier-I warehouse, potentially saving cost upto 11%

Product Engineer, Udaan (Hiveloop Technology Pvt. Ltd.), Bengaluru, India,   07/2019 - 12/2021
- Initiated & led data platform project to enable self-serve near real-time data workflows for software engineers, analysts, data scientists and business stakeholders that currently handles petabyte-scale data regularly
- Worked full-stack, building & scaling micro-services and infrastructure for front-end, middle-ware & back-end modules
- Iterated on product & features to achieve 100% company-wide voluntary adoption
- Worked on scalability & fault-tolerance, reducing outages by 63% and total cost by 54%
- Developed query execution orchestration engine, resulting in sub-linear growth of cost, with v3 costing 70% less than v0, reducing platform total cost by 19%
- Architected DAG (Directed Acyclic Graph) based execution to reliably enforce data dependency & integrity
- Rearchitected critical microservices & databases by leveraging caching and event driven architecture increasing resource efficiency by 2.5x and improved robustness
- Co-architected MLOps Platform (Feature Store, Versioned Model Pipeline, Versioned Data catalog and Notebooks Integration) to enable numerous additional use cases
- Overall Impact: improved execution efficiency for existing use cases by 2-22x and enabled hundreds of new use cases
- Part of hiring panel for product & software engineers, interviewing 100+ candidates, mentored interns and college graduates
- Received #crushing_it award for leading and building data platform, that received usage score of 8.1 from 2400+ users

PROJECTS

- **FarmTV** - Created a react native app for farmers of KA, India, to watch scientific agricultural videos. Has 50,000+ downloads and 1000+ daily active users; https://shramajeevi.com#farmTV   03/2021 - 06/2021
- **Radiant Board** - Developed firmware (embedded C) and desktop application (C++.Net) for an Information Display Board powered by ATmega1280 controller, used by 2000+ stores of BPCL across India   04/2017 - 08/2017
- **osh** - command line application to debug and fix errors using LLMs - winner of Hasgeek Deephack 2023 - Developer tools category; getosh.com   03/2023
- **GPT4 BPE** (class project): Implemented Byte Pair Encoding used by GPT4 in CUDA C++   02/2024 - 03/2024
- **Distributed PageRank** (class project) - algorithm implementation in Spark and MPI   11/2023 - 12/2023
- **fsort** (class project) - Built desktop application with QT C++ for content-based image segregation using Inception V3 CNN & T-SNE clustering, using Caffe2 C++; github.com/manuhg/fsort   03/2018 - 05/2018
- **manuOS** (hobby project) - Developed a basic X86 Kernel written in C and x86 assembly, that can handle basic interrupts; github.com/manuhg/manuOS   09/2011 - 01/2012