MANU HEGDE

Seattle, WA   manuhegdev@gmail.com   (425)215-6366   github.com/manuhg   linkedin.com/in/manu-hegde

SUMMARY

MS in CS graduate with 4 years of professional experience in full stack(backend heavy) software engineering, building robust & scalable software and data systems, working across stack from WebUI to micro-services and cloud infrastructure

EDUCATION

Master of Science (MS) in Computer Science & Software Engineering
University of Washington | Bothell, WA   **09/2023 - 05/2025**
Coursework: Parallel Programming, High Performance Computing, Software Architecture, Natural Language Processing

Bachelor of Engineering (BE) in Computer Science & Engineering
Dr. Ambedkar Institute of Technology, Visvesvaraya Technological University | Bengaluru, India   **08/2015 - 06/2019**
Coursework: Operating Systems, Compiler Design, Data Structures & Algorithms, Database Management, Graph Theory

AWARDS AND ACCOMPLISHMENTS

- **#crushing_it** award at Udaan, for leading and building high-impact internal data platform (rated 8.1/10 by 2400+ users)
- Received **5 consecutive quarters** of Research Assistantship for consistently exceeding expectations
- Winner, Hasgeek Deephack 2023 Hackathon – Developer Tools category (project osh; getosh.com)

WORK EXPERIENCE

Graduate Research Assistant, University of Washington, Bothell, WA   **11/2023 - 12/2024**
- Streamlined deployment by setting up CI/CD with GitHub Actions & Kubernetes (K3s), speeding up by 91.6%
- Enabled monitoring with Prometheus & Grafana; maintained AWS & Linux server infrastructure ensuring **zero-downtime**
- Refactored Django backend to improve **runtime by 29%**, saving over 600ms per request; boosted **end-to-end performance 27%** via API caching (Memcached) and UI datastore (Redux)

Senior Software Engineer - L3, Tekion Corp India, Bengaluru, India   **01/2023 - 07/2023**
Tekion is a California based automotive software company founded by former Tesla CIO
- Developed micro-services for Peer-to-Peer real-time collaboration features for e-signing platform, accelerating adoption
- Built features to enable a configurable & guided signing process for multidocument multiparticipant digital contracts
- Refactored 2 existing services, yielding **18% improvement** in API response time

Product Engineer, Udaan (Hiveloop Technology Pvt. Ltd.), Bengaluru, India,   **07/2019 - 12/2022**
Udaan is a top B2B e-commerce platform in India serving millions of retailers, backed by Lightspeed ventures
- **Initiated and Led end-to-end development of a petabyte-scale data platform** enabling self-serve, near real-time workflows for all stakeholders (technology & business users)
- Built and scaled full-stack microservices and infrastructure across frontend, middleware, and backend layers
- Implemented data masking, lineage tracking, and RBAC; integrated platform capabilities into ML workflows
- Improved system fault tolerance and scalability, **reducing outages by 63**% and platform **costs by 54%**
- Developed DAG-based orchestration engine to reliably enforce data dependencies, lowering query execution costs by 19% and ensuring sub-proportional cost growth
- Re-architected core services for **2.5x resource efficiency** using caching, pooling, and event-driven design
- Co-developed MLOps platform (Feature Store, Model CI/CD) to support and scale new ML use cases
- **Result:** Achieved **2–22x** efficiency gains on existing workflows & enabled 100s of new ones, reducing total cost by **40%**

TECHNICAL SKILLS

Languages: Python, Kotlin, Java, C++, Rust, TypeScript; HTML, CSS, Shell Scripting (Bash, Zsh), SQL
Frameworks: .NET, ReactJS, React Native, Redux, Springboot, JUnit5, Locust, Mockito, Django, Flask, PyTorch, llama.cpp
Technologies: Kubernetes, Jenkins, GitHub Actions, Git, Docker, Linux, Apache Spark, Elasticsearch, Redis, EventHub, Kafka, Prometheus, PostgreSQL, AWS Lambda, Microsoft SQL Server, MongoDB, MySQL, Cassandra, Terraform, KeyVault, openMP
Paradigms: Test-driven development, Object-oriented design, Continuous Integration & Continuous Delivery (CI/CD), Agile Development, Generative AI, Multi-cloud platform development

PROJECTS

Project TLDR: Standalone desktop application implementing on-device LLM based Retrieval Augmented Generation by leveraging GPU and NPU (Neural Processing Unit) on Apple Silicon**;** C++, Swift, openMP, llama.cpp, SQLite**; tldr.cool**

FarmTV: Mobile application for farmers of India to watch scientific agricultural videos. Has 50,000+ downloads and 1,000+ daily active users**;** Tech stack: JavaScript & React Native**;** Link: **https://shramajeevi.com#farmTV**

Radiant Board: Developed firmware and desktop application for an Information Display Board, deployed at 2000+ BPCL stores across India**;** Tech stack: Embedded C, C++, .NET, ATmega1280 controller**;** Link:**github.com/manuhg/radiant**

manuOS: A basic x86 Kernel written in C and x86 assembly, that can handle basic interrupts
Tech stack: x86 assembly, C, QEMU; Link: **sourceforge.net/projects/manuos**; github.com/manuhg/manuOS

osh: command-line application to debug and fix errors using LLMs - winner of Hasgeek Deephack 2023;
Tech stack: Python, Bash; Link: **getosh.com**

GPT4 BPE: Byte Pair Encoding used by GPT4 in CUDA; Tech stack: C++, CUDA; Link: **github.com/manuhg/bpe-cuda**