

Manoj Kumar

Software Engineer

Webpage: cse.iitd.ac.in/~cs5180411

Email: manoj18.iitd@gmail.com

Github: manoj2601

Mobile: +91-9509196171

EDUCATION

• Indian Institute of Technology (IIT), Delhi

- *B.Tech. and M.Tech (dual) - Computer Science; CGPA: 8.25*

New Delhi, India

July 2018 - June 2023

• Rajasthan Board of Secondary Education

- 12th: 98.20% 10th: 93.50%

Sikar, Rajasthan

2015 - 2017

WORK EXPERIENCE

• Zomato Pvt. Ltd

• Software Engineering Intern (*Go · microservices · gRPC · Kafka*)

Head Office, Gurgaon

Jan 2023 - May 2023

- Responsible for managing all types of time and distance deliverables in Zomato, including ETA computation for an order
- Worked on Go microservices, redis, dynamoDB, Kafka producers-consumers and gRPCs. OSRM is used for distance

• Uber India R & D Pvt. Ltd.

• Software Engineering Intern (*U4B: Go · Microservices · gRPC · Fx*)

Bangalore, India

June 2022 - July 2022

- Worked in service and DB layer to design database schema and create APIs to upsert and fetch records using **presto**
- Designed multiple optimization approaches and got Design Doc reviewed. Implemented in **Go** with **Fx/Glue** framework
- **Impact:** Optimized service fee collection workflow by **98%**, responsible for collecting payments from U4B organizations

• Aarhus University, Denmark

• Research Intern: Prof. Magnus Madsen

June 2021 - July 2021

- Worked on **Flix programming language** (www.flix.dev) to improve its compiler and VSCode extension
- **Language-Server-Protocol** is used to communicate between the client and the server, that connects to the compiler
- **Impact:** Added features: auto-completion, highlight, semantic and symbol support, add/remove packages, code-lenses

RELEVANT PROJECTS

• Route Optimization and Fairness in Domino's Delivery System

IIT Delhi

• M.Tech. Project: Prof. Sayan Ranu, Prof. Amitabha Bagchi

Jan 2022 - present

- Worked in collaboration with **Domino's** to minimize the food-delivery time in a decoupled order - restaurant - delivery vehicle model. Order assignment to restaurant and delivery vehicles also takes care of **fairness** among all riders
- Built a **XGBoost** ML model to predict the preparation time for orders in a restaurant and trained using real data
- Investigate **heuristics** solutions in polynomial time on **real-world** data since the problem is NP-hard and inapproximable

• Job Scheduling and Management

• Data Structures & Algorithms: Prof. Subodh Kumar

IIT Delhi

Nov 2019 - Nov 2019

- Designed Java module to handle multiple jobs of different users/projects, execute based on **priority** and budget available
- Used multiple self-implemented & efficient data structures **Trie**, **Min/Max Heap**, and **Red Black Tree** to store data

• Personalized Instagram Helper with Auto Posting Feature

Independent Project

• Android Studio + Flask Server

April 2022

- Built a server that takes text from google form responses, creates a picture using a template and posts it on Instagram
- Created an **Android App (Java)** with options to manually approve or decline a response of google form before posting it
- Used **Flask**, **postgreSQL**, **PIL** and **instagrap** framework to implement the server. **AWS** is used for hosting

• Large File Downloader using multiple TCP sockets (BitTorrent)

IIT Delhi

• Computer Networks: Prof. Aditeshwar Seth

November 2020

- Module programmed to download data in chunks by opening parallel **TCP** connections to server using **multi-threading**
- Resilient to **Error Handling** and resumes downloading from the last received packet in case of any disconnection

• Twitter Trending List on stream of large data

IIT Delhi

• Cloud Computing and Fundamentals: Prof. Abhilash Jindal

March 2022 - April 2022

- Designed a scalable and **fault-tolerant** application to process **tweets** on the fly and gives the top 10 words at any time
- Deployed on a cluster of 3 nodes with **network partitioning** among the replicated storage systems on the nodes to build an eventually consistent system. **Redis**, **RabbitMQ**, and **Celery** packages are used for the concurrency & consistency

TECHNICAL SKILLS

- **Programming Skills:** Go, Java, Python, C/C++, SQL, Javascript

- **Frameworks & Tools:** pandas, sklearn, Springboot, Fx, Git, AWS CLI, Docker, Redis

SCHOLASTIC ACHIEVEMENTS

- Secured **3rd** merit in Class XII among more than **2,000,00** students who appeared in the exam - May, 2017

- Certified in Data Structures and Algorithms Program (**CCDSAP**) by **Codechef** - February, 2020

- Mission Helix's Coding Contest **Rank 3** in All India organized by Coding Club, India - November, 2020

POSITION OF RESPONSIBILITIES

- **Teaching Assistant (TA): Logic for Comp. Science** - Fall 2022 and **Parallel Programming** - Spring 2023
- **Head Mentor BSW:** Responsible for the BSW mentorship program and guided the selected Student mentors - 2022
- **GCL Coordinator CSE Dept:** Responsible for managing and coordinating General Computing Lab representatives
- **Hostel Representative of Indoor Sports Club - IIT Delhi.** Responsible for organizing indoor games in Hostel