

# Ritik Kumar

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## SUMMARY

Back end and DevOps programmer interested in Computer Networks & Protocols, Cloud and Distributed Computing. Open Source contributor.

## EDUCATION

### B. TECH., COMPUTER SCIENCE AND ENGINEERING

CUMULATIVE GPA 8.367/10  
Indian Institute of Technology,  
Roorkee, India (2021)

### SENIOR SECONDARY EDUCATION

BOARDS 92%

## SKILLS

### LANGUAGES

Comfortable

Python, Java, Go, JavaScript,  
TypeScript, HTML/CSS, bash

Familiar

Kotlin, C, C++, C#, Q#, C, CoffeeScript

### FRAMEWORKS/LIBRARIES

AWS Boto, Django, Android Java  
Framework, Bee (Go)

### SOFTWARE/TOOLS/SERVICES

Git, Sentry, make, Doxygen, ssh, Nginx,  
Docker, Docker-compose, EFK  
MongoDB, PostgreSQL, Postgis, Redis  
Cache, Elastic Search  
eBPF, Mininet, Wireshark, Tcpdump,  
nc  
Heroku, Firebase-GCP, AWS

## RESPONSIBILITY

- Back-end & Systems Developer and Mentor @MDG IIT Roorkee.
- Product Manager @Appetizer.
- Volunteer @NSS IIT Roorkee.

## EXPERIENCE

### NETWORK STREAMING ANALYTICS SYSTEMS FOR LAST-MILE NETWORKS | RESEARCH INTERN | LINK

UCSB, USA

- Capture packet level data from the last mile network which consists of end-users' devices like home routers.
- Studied and developed eBPF-XDP to implement packet collection pipeline in the Linux kernel.
- Analysed various approach to achieve efficient collection & compression.

### FAMPAY | BACKEND REMOTE INTERN | LINK

Bangalore

- Set up EFK Log Pipeline
- Add user location based filter storing them in Postgis.

### MICROSOFT EDGE | SOFTWARE DEVELOPER REMOTE INTERN

Microsoft 2020

- Developed a new feature to share EDGE Collections.
- Modified the Edge's codebase to modify and expose the API.

### GOOGLE SUMMER OF CODE | STUDENT DEVELOPER | LINK

Named Data Network 2019

- Developed NpChat, a photo and file-sharing peer-to-peer decentralised application built for Android on NDN (ICN). Access control is ensured using encryption and data is fetched using AIMD pipelined Segment-Fetcher.
- Wrote the AIMD pipelined Segment-Fetcher for their Java Support Library.
- Updated the user Identity management application for NpChat.

### BLOGS | TECHNICAL WRITER | LINK

Wrote a number of blogs on Computer Networks and Protocols.

## PROJECTS

### APPETIZER | PRODUCT MANAGER & BACK END HEAD | LINK

MDG IIT Roorkee

Appetizer is official mobile application for IIT Roorkee aiming towards the management of mess functionalities. Features include providing mess menu, recording the presence of students, give a rebate and simplify feedback processes.

- Developed new features on the back end while maintaining existing ones.
- Worked on Database Query optimization and reducing Network Traffic.
- Implemented and tested multi-messing feature.

### CODEPHILE | BACK-END HEAD | LINK

MDG IIT Roorkee

Codephile is a social networking application for competitive coders.

The tech stack includes Redis Elasticache, ElasticSearch, AWS-EC2, Firebase, Nginx, MongoDB, docker & Bee

- Headed & mentored the back-end development and server deployment.

## ACHIEVEMENTS

- Ran Appetizer in the campus for 1 yr with the average DAU exceeding 3500.
- Our team stood 3rd in Hackinthenorth hackathon at IIIT Allahabad.