Nikhil Gumasthi

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About

Enthusiastic Machine Learning Engineer with a solid foundation in theoretical concepts and practical coding skills, including DSA, and experience in training and refining models.

Education

Indian Institute of Technology, Bhilai **Sep. 2022 – May 2024**
Master of Technology in Computer Science(CGPA 8.94) *Bhilai, Chattisgarh*

G H Raisoni Institute of Engineering and Technology, Pune **Jul. 2017 – Nov. 2021**
Bachelor of Technology in Computer Science(CGPA 7.59) *Pune, Maharastra*

Sinhgad City School, Pune **Sep. 2007 – Jan. 2017**
High Secondary Education(Percentage 88.86%) *Pune, Maharastra*

Technical Skills

Machine learning: Pytorch • PyG • sklearn • seaborn
Frontend: ExtJs • JavaScript • CSS • Bootstrap • React • HTML
Backend: Spring Boot • Node.js • Java • Flask • Python • C++ • C
Database: MySQL • PostgreSQL • MongoDB • Redis
Automation and others: Jenkins • Git • Selenium • Docker • Nginx • Linux

Experience

IIT Hyderabad SRC project **Jun. 2024 – Present**
Data Analyst *Hyderabad, Telangana*

- Implemented Elastic Weight Consolidation (ewc) for using incremental learning in fraud detection using Graph Neural Networks (GNN).

Teaching Assistant **Sep. 2022 – May 2024**
IIT Bhilai *Bhilai, Chattisgarh*

- Responsibility as a TA for the following courses.
  - IC100 (Programming in C)
  - CS100 (Software tools and technologies – Linux, Git, HTML, CSS and JavaScript)
  - CS301 (Computer Networking)
  - CSL605 (Networking lab and Cybersecurity)
  - TPL612 (Mobile and Wireless Networking)
- involves teaching the students core concepts, resolving their doubts and preparing assignments.

Enkin Lab India Private Ltd **Jan. 2022 – July 2022**
Junior Software Developer *Pune, Maharastra*

- Worked as a software developer by contributing to multiple projects, which involved creating CRON jobs, Setting up Continuous Integration by building Jenkins Pipeline for automation, frontend designing, creating multiple APIs in spring boot, and creating an extension for the web browser to achieve project milestones.
- Developed a module to visualize and send daily test result reports to team members using HTML, JavaScript, and CSS through the Slack API.

Research work and Projects

A Hybrid Channel Access Mechanism for NR-U to Improve the Coexistence Performance. **Jan. 2024**

- Implemented a novel random reservation slot selection algorithm for NR-U devices to increase fairness and efficiency in a saturated scenario and analyzed trade-offs.
- Implemented the simulator using simpy library, a Python discrete event simulator [This work was accepted for 2024 16th International Conference on COMmunication Systems and NETworkS (COMSNETS)]

Priority-based MPTCP Scheduler for 5G and Beyond Heterogeneous Links. **Jan. 2024**

- Developed a Packet drop sensitive scheduler using AHP and GRA framework to better rectify the problem of high packet drop scenario in 5G mmwave link.
- Integrated Multiple library modules including ns-3 with ns3-mmwave and LibOS for enabling MPTCP connectivity scenario in Linux kernel and dockerized the complete simulator setup [This work was accepted for 2024 16th International Conference on COMmunication Systems and NETworkS (COMSNETS)]

Improving Performance in 5G mmWave: A Coupled Congestion Control Algorithm for Multipath TCP.

- Developed a coupled congestion control algorithm to enhance fairness and throughput for mmWave, considering its high bandwidth and packet drops characteristics.
- Demonstrated the gains of the proposed algorithm and tested the performance using the ns-3-DCE simulator with MPTCP and mmWave features. [This work has been submitted to GlOBECOM 2024]

Multi-tier Load balancing Algorithm using Fog computing. **Jan. 2021**

- Designed a simple 4-tier load balancing algorithm for fog computing.
- Dual fuzzy logic and k-means clustering techniques were employed to facilitate load balancing..

Relevant Coursework

- Machine learning
- NLP
- Advanced Networking
- System Design
- Artificial Intelligence
- Wireless Communication
- Systems Programming
- Computer Architecture

Language

English • Hindi • Marathi • Telugu • German

Extra-Curricular activities

Winner of NPCI AEPS synthetic data Hackathon 2024.
Participated in multiple extracurricular activities as a volunteer.