Sahil Bhalchandra Purohit

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Summary

Graduate student in Computer Science with 11 months of experience in backend development and IT consultation gained through internships and part-time jobs. Developed backend services using Java Spring Boot and improved frontend interfaces with ReactJS at Tata Consultancy Services. Worked under a professor during the summer to secure a thesis opportunity, and will be starting a master's thesis focused on network protocols. Aiming to leverage technical skills and research interests to pursue software engineering roles and network research opportunities, including cloud technologies.

Education

North Carolina State University Raleigh, NC, USA
Masters of Science (MS), Computer Science, Aug 2023 - May 2025
OS, Cloud Computing, Algorithms, Internet Protocols, Switch Network Management GPA: 4.0/4.0

Visvesvaraya National Institute of Technology Nagpur, MH, India
Bachelor of Technology (BTech), Computer Science, Jul 2019 - May 2023
Data Structures, DBMS, AI, ML, Graph Theory, Parallel Computation, Distributed Systems GPA: 9.17/10.0

Skills

Languages: C, C++, Java, Python, Kotlin, SQL, HTML, CSS, JavaScript
Databases and Operating Systems: MySQL, MongoDB, Linux, Windows, Ubuntu
Computer Networks: Wireshark, TCP/IP, DNS, DHCP, NAT, HTTP, IPv4, Socket Programming
Tools/Frameworks: GIT, REST API's, Docker, NodeJS, ReactJS, Spring Boot, ns3 simulator

Work Experience

Poole College of Management Raleigh, NC
Student Computer Consultant (Part Time) Nov 2023 - Present
- Delivered IT consultation to staff and students, ensuring seamless technical support and issue resolution.
- Engineered a Chrome Extension to scrape website details, optimizing data collection and analysis.

Tata Consultancy Services, Pune, India
Software Engineering Intern May 2022 - Jul 2022
- Designed and integrated a Python tool with a web solution to automate key processes, driving operational efficiency.
- Developed backend services using Java Spring Boot and enhanced frontend interfaces with ReactJS, improving system usability.

Projects

Internet Protocols Project Jan 2024 - Aug 2024
- Collaborated with Professor Dr. Jianqing Liu to replicate experiments from research papers on TCP variants like CUBIC, DCTCP, and BBR using the ns-3 simulator. Evaluated the performance of various TCP protocols, contributing to enhanced network simulation accuracy.
- Developed Client-Server Models for HTTP 1.0, HTTP 2.0, and gRPC protocols, along with a Peer-to-Peer Model for the BitTorrent Protocol in Python, facilitating secure and efficient file transfers
- Constructed a dumbbell topology using ns3 simulator to evaluate the performance of TCP CUBIC and DCTCP, yielding insights into network behavior and performance optimization.

Xinu Operating System Enhancement Aug 2023 - Nov 2023
- Implemented an Exponential Distribution-based Scheduler and a Linux-like Scheduler in Xinu OS, improving process management.
- Developed a Memory Virtualization system with a 2-level Paging, Page Fault Handler, backing storage and Disk storage, enhancing memory management and efficiency.

Backend Development and Natural Language Processing Jul 2022 - Apr 2023
- Built a backend system using Flask to automate the interview process, streamlining candidate assessment and recruitment.
- Integrated an NLP-based recommendation system, improving the accuracy and relevance of candidate recommendations.
- Published findings in a paper at the PCEMS 2023 conference.