ABHAY SINGH THAKUR

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EXPERIENCE

Software Engineer | *Molina Healthcare* - Chicago, IL   **Jun 2023 – Present**
- Creating and maintaining health information systems, integrating EHR and patient management tools to enhance clinical efficiency and data accuracy
- Implementing stringent data security measures, ensuring HIPAA compliance and reducing data breaches by 30%
- Applying data analytics to improve patient outcome predictions and care personalization, boosting patient satisfaction by 20%
- Partnering with healthcare and IT professionals to develop user-friendly telehealth and remote monitoring applications
- Adopting Agile methodologies, enhancing software project delivery speed by up to 2x and increasing quality and reliability

Technical Intern | *Pacific Northwest National Lab (US Dept. of Energy)* - Richland, WA   **Jun 2022 – Oct 2022**
- Automated resource-provisioning pipeline by writing Terraform and Ansible scripts to deploy network and compute devices in a large-scale environment up to 3x faster than existing manual procedure saving 130+ person-hours annually
- Deployed and documented testbeds on highly secured on-premise intranet to simulate cyber threat scenarios which helped in efficiently utilizing allocated resources
- Minimized network infrastructure storage costs by using infrastructure-as-code tools which also helped in dealing with finer functional requirements
- Collaborated with multiple teams to ensure delivery of various functional requirements using the automated pipeline leading to a better integration of cross-team network infrastructure

Undergraduate Teaching Assistant | *Purdue University* – West Lafayette, IN   **Aug 2021 – May 2023**
- Developed course curriculum, graded assignments for 200+ students for CS 251(Data Structures and Algorithms)
- Conducted 3+ weekly office hours to resolve student queries and help students with assignments using Piazza

EDUCATION

Purdue University   **Aug 2019 – Aug 2023**
Bachelor of Science in Computer Science and Data Science   *West Lafayette, IN*
Dean's List and Semester Honors (Fall 2019, Spring 2020, Fall 2020)
Concentration: Cybersecurity and Machine Intelligence
Relevant Coursework: Systems Programming, OOPS, DSA, Machine Learning, Data Mining, Database Design, Cryptography, Agile Methodology

TECHNICAL SKILLS

Languages: Python, C/C++, Java, Go, Rust, Ruby, R, SQL, Assembly (x86, ARM), Shell Scripting (Bash), JavaScript
Dev Tools & Libraries: GitHub, Jira, Vim, VS Code, RStudio, MySQL, SAS, Terraform, Ansible, scikit, Tensorflow
Frameworks: Tailwind CSS, React, Next.js, AWS, Django, GraphQL, MongoDB, Tableau, Docker, Kubernetes, web3

ACADEMIC PROJECTS

Purdue Circle | *GraphQL, next.js, TailwindCSS*   **Jan 2022 – May 2022**
- Created a social media and networking app for Purdue students as part of an Agile team
- Constructed a pipeline to feed user queries processed by next.js into a headless GraphQL CMS to minimize response payload size by 60%
- Modeled a popularity engine with 73% accuracy and employed features such as user posts, timelines, direct messaging, and reactions to ensure content is socially curated and promoted exclusively by users
- Developed robust social interaction functionalities, including algorithm-driven user posts, real-time timelines, secure direct messaging
- Leveraged TailwindCSS for frontend development, ensuring cross-platform compatibility and responsive design, contributing to an optimal user interface and user experience

Movie Magpie | *React, Material UI, Firebase*   **Jul 2021 – Aug 2021**
- Built a movie recommendation system with accuracy 78% based on user-defined parameters such as movie genre, release dates, ratings and popularity, utilizing API calls made over a database consisting 10k+ movies
- Added CRUD functionality using Google Firebase to provide users with features such as saving recommendations, creating user profiles and provide feedback on accuracy of predictions
- Streamlined user registration process by implementing a QR code scanning feature using Firebase and React.js

MyShell | *C++, Flex, Bison, Bash*   **Mar 2021 – Apr 2021**
- Engineered a shell interpreter in C++ by incorporating functionalities from bash and csh, supporting over 10 features including autocomplete, command history, and environment variable handling
- Enhanced the interpreter with advanced features such as support for subshells, providing a more robust and versatile user experience
- Utilized Flex for scanner generation and Bison as a parser generator, effectively implementing shell grammar for optimized command processing

NASA International Space Apps Challenge 2020 | *Tensorflow, Tableau, Excel*   **Sept 2020 – Oct 2020**
- Tackled the 'Spot that Fire v3' challenge by creating a fire recognition system trained on 1M+ live dataset by NASA
- Developed a prototype app with 82% accuracy for alerting users about nearby dangerous fires, enhancing safety and responsiveness
- Created a Tableau dashboard to visualize and disseminate information on wildfire occurrences, raising public awareness and facilitating preventive measures

Find My Bike | *Android Studio, Google Maps Platform*   **Sept 2019**
- Developed an Android app to help locate lost bikes on college campuses using Google's Geolocation API and Maps SDK
- Designed a UI that provided users with an interactive map that helped them navigate back to lost bikes
- Incorporated support for over 50k+ queries per day with an error rate of less than 12%
- Implemented push notifications and alerts using Google Firebase Cloud Messaging, significantly aiding in the timely retrieval of lost bikes

ACTIVITIES AND ORGANIZATIONS

Operations Head *Cricket and Social Outreach (CASO)*   **Apr 2021 – Dec 2021**
- Collaborating with other board members to plan and organize cricket tournaments
- Coordinating weekly social events and managing budgets, resulting in a 50% membership increase and heightened student engagement on campus

Organizer, Web Dev Team *Purdue Hackers*   **Aug 2021 – Mar 2022**
- Planning and executing events such as seminars, workshops, and information sessions for students while working with the Purdue Hackers Web Dev team
- Revamped Purdue Hackers' entire web presence from scratch, enhancing its appeal and outreach for increased engagement and visibility

Member *b01lers (Purdue Capture The Flag)*   **Jan 2021 – Aug 2023**
- Applied skills in web security, cryptography, and forensics to compete in computer security competitions where participants solved security-themed challenges to obtain the highest score