BISWAJIT SATAPATHY

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EDUCATION

Master of Science in Computer Science   **Sep 2024 - Present**
Boston University, Boston
Courses: Object Oriented and Design, Graduate Algorithms, Database Management System, Distributed Systems
Bachelor of Technology in Computer Science and Engineering   **Aug 2018 - May 2022**
Vellore Institute of Technology, Chennai, India

PROFESSIONAL EXPERIENCE

Software Developer   **Feb 2022 - June 2024**
AppViewX Pvt. Ltd, India
- Implemented a user-friendly interface using **Python** supporting **CRUD** functionalities of **Nginx devices**, empowering teams to effortlessly manage over **1,500 unique upstream configurations**, which directly addressed key pain points, significantly improving service uptime.
- Optimized profile addition for **F5 load balancing devices** by transitioning the time complexity from **$O(n^2)$ to $O(n \log n)$** using a **sorting-based approach** and **binary search** in **Java**. This enhancement reduced execution time by nearly **30%** for managing **10,000+ devices**, significantly improving operational speed and scalability.
- Streamlined the flow of information between the **AppViewX GUI** and various **backend services**, improving system efficiency, reducing manual intervention that previously required around **50 hours** of monthly work.
- Built an end-to-end flow for selecting and saving certificate options that seamlessly triggers **backend processes** interacting with the **Python SDK** to update the **database**. This solution enhanced the user experience for critical customers and eased out the management of over **50,000 certificates**.
- Developed **automated workflows** for **Kubernetes cluster deletion** based on **user-selected parameters**, incorporating **complex logic** for optimal cluster selection. Additionally, created methods to **fetch** and **pre-select data** from the database and implemented several **backend APIs** using **Java** to perform these tasks, ensuring accurate configurations.

Research Intern   **Feb 2021 - April 2021**
K7 Computing Pvt. Ltd, India
- Used **Machine Learning** to source and classify various cyber threats using basic **python** scripts and database tools.
- Conducted comprehensive data analysis on a dataset of **10,000+ rows** to identify patterns in cyber threats, refining classification algorithms and achieving a **15% improvement** in performance.

PROJECTS

Board Games   **Sep 2024 - Oct 2024**
- Developed a Java-based platform featuring 4 games (Tic Tac, Super Tic Tac, O & Chaos, Quoridor), focusing on **modular design, reusability, and scalability** by leveraging Object-Oriented principles like **interfaces** and **shared resources**
- Enabling easy expansion and efficient game management, reducing development time for new games by **30%**.

Key-Value Store   **Sep 2024 - Oct 2024**
- Implemented a distributed key-value store based on the **Omni-Paxos protocol**, developed from the ground up using **Go**.
- Ensured efficient data storage and retrieval with consistency and fault tolerance giving **50% increase** in read/write speed.

Efficient Data Management System   **Sep 2024 - Oct 2024**
- Built a database management system in **C++** featuring a **buffer pool** for optimized data access.
- Implemented efficient data insertion, modification, and deletion using **B+ Trees** and **LSM trees**, ensuring high-performance reads and writes achieving a **40% reduction** in query response time.

Ecommerce Shopping   **Dec 2021 – Jan 2022**
- Developed a responsive e-commerce web application using the **MERN** (MongoDB, Express, React, Node) architecture with robust search, filter, and pagination features.
- Integrated **Stripe** for payments and user account management. Built an **admin dashboard** for order processing and product/user management, ensuring mobile responsiveness.

ACHIEVEMENTS

Hackathons: Smart India Hackathon , Hackerearth
Publications: Associative classification with kNN algorithm
SKILLS : C++, Java, Python, Go, MongoDB, Git, Jenkins, REST APIs, Kubernetes, LinuxOS, Jira, Django, SQL, JavaScript, Linux