Amrit Gaurav Rath

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EDUCATION

Indian Institute of Technology, Bhubaneswar   Bhubaneswar, Odisha, India
Dual Degree(B.Tech+M.Tech) in Electrical Engineering, CGPA : 7.9/10   *Aug 2018 – May 2023*

SKILLS

Programming/Scripting Languages:- C/C++, Java, Groovy, Bash, MATLAB
DevOps:- AWS, Docker, Kubernetes, Helm, Jenkins, Argocd, Fluxcd, Grafana, Ansible, Istio, Linux, Git, Nutanix
Databases:- Postgres, Kafka, Druid, Flink, MySQL, MongoDB
Web Development:- JavaScript, NodeJS, REST API, GraphQL, HTML, CSS, Bootstrap, PHP
Miscellaneous:- Data Structures, Algorithms, OOPS, System Design, Distributed Systems, DBMS

WORK EXPERIENCE

Brane Enterprises Pvt. Ltd.   Bengaluru, Karnataka, India
Software Development Engineer-1   *May 2023 – Present*

* Deployed microservices on AWS **EKS** and Nutanix **Kubernetes** clusters with Helm Charts, created **CI/CD** pipelines with **Jenkins, FluxCD and ArgoCD**, boosting deployment speed by 40%.
* Migrated microservices & databases from **AWS** to **Nutanix** infrastructure saving $500,000/pa on AWS Billings.
* Designed a **proxy server** for the users to access DBs in Nutanix, automated requests and approvals on DevOps webapp, reducing **200+** manual requests per week.
* Configured **QA-Jenkins** on EC2 instances, increased efficiency by **3x** by automating microservices **QA testing**.
* Executed **multi architecture docker** images and deployed them on arm instances, optimising cost by **30%**.
* Created **Jenkins pipeline** for Elastic Search, PostgresSQL & MongoDB **data migration** across 20+ tenants.
* Implemented **Nexus Artifactory** to store the 10+ dependency JARs to use in pipeline, cutting runtime by **80%**.
* Reduced manual effort by **70%** by automating various databases installation setup using **Ansible**.
* Set up monitoring for Druid and Flink using **Grafana Agent**; Used **AWS Lambda** to check their health status.
* Worked on **S3** bucket creations, **IAM** user creations to use AWS resources & **Application Load Balancer** Setup.

MAJOR PROJECTS

Event Booking WebApp using GraphQL | *MERN, GraphQL, JWT*
* Built a Web Application using **MERN** Stack and **GraphQL** API to book, view, add & cancel events.
* Integrated **JWT**-based authentication for secure user registration, login, and access control for different features.
* Created functionalities using **GraphQL** query and mutations, enhancing the app's efficiency and user experience.
* Employed MongoDB with **Mongoose** for database & schema definition, ensuring efficient, scalable data storage.

Real-Time Group Chat WebApp | *HTML, CSS, JavaScript, Socket.io*
* Created a group chat application for real-time, bidirectional communication between clients and servers.
* Utilized **Socket.io**'s event-driven architecture for handling user events, enhancing responsiveness and interaction.
* Built frontend with HTML, CSS, and backend with nodejs/express to manage connections and events.

Model Predictive Control(MPC) of DC-DC Converter | *MATLAB, Simulink, STM32*
* Designed **MPC** to control a real-time hardware setup of electrical converter using an STM32 microprocessor.
* Successfully brought down the settling time from 1.5ms to 1ms by using MPC over a traditional PID controller.

Socio-Cult Fest Registration | *HTML, CSS, PHP, JS, MySQL, Bootstrap*
* Developed the Registration Website for 20+ cultural events in Annual Socio-Cultural Fest 2021.
* Handled 500+ registrations while hosting them on CPanel, also managed database using MySQL/PHP.

PUBLICATIONS, ACHIEVEMENTS & PORs

* **Paper published:** "A Hybrid Model Predictive Controller for an Integrated Dual-DC Boost Converter," by Ritam Chakraborty, Amrit Gaurav Rath, Olive Ray, and Kapil Jha, at the **INTELEC 2024**.
* Secured **Global Rank 1680** in 2021 and **2450** in 2022 **Meta Hackercup Round-2**(ID: amrit2104).
* Competed in **Google Kickstart**(ID: amrit2104), **2022**: Global Ranks: Round-B: 1313, Round-D: 1693, Round-F: 1990, Round-G: 1623, & Round-H: 1986, **2021**: Round-E: 2053, Round-H: 1328.
* Solved **600+** questions on **Leetcode** and **GFG**; Achieved **4-star on codechef**(max rating: 1988).
* Represented 400+ students and coordinated industry relations for **student placements & internships** at CDC.
* Taught 50+ 3rd and 4th year students for electrical engineering labs as **Graduate Teaching Assistant**.
* Served as governor for film making club, member of socio-welfare club & branch representative for EE students.
* Achieved **All India Rank 4469** in JEE Advanced 2018 & **All India Rank 1854** in JEE Main 2018.