Kingshuk Sadhu

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EXPERIENCE

- **Enphase Energy**   Bangalore, India
  Software Engineer   *Jul 2022 – Present*
  - Automated a business requirement to generate a monthly report on the average discharge energy for Grid Services programs using a **Quartz scheduler**. Reports are uploaded to the **SFTP** server and **AWS S3** storage.
  - Designed and led the development of **site-control** feature to enables users to create multi-asset events driven by an intelligent algorithm. **Asynchronous** queues and topics (**AWS SQS** and **SNS**) are used to create real-time events.
  - Designed and led the development of a Notification Service. Used **asynchronous** messaging (using **AWS SQS** and **SNS**) between API servers and notification service. The notifications are filtered according to user preferences for both **emails** and in-app **alerts**.
  - Successfully optimized the latencies of 10 high-traffic APIs ($\sim$ 150-250 rps) in Grid Services, reducing their P95 latencies under 200 ms.
  - Integrated **Redis** as a caching layer for Role-Based Access Control (**RBAC**) lists in microservices to optimize latency, alongside database **query optimization**, **indexing** and **pagination**.
  - Designed and implemented **Dynamic Form** that stores metadata about a program's form. The form's properties can be configured by the admin. This has reduced the onboarding time for new partners.
  - Upgraded two microservices from Spring Boot 2 to Spring Boot 3.

SKILLS

- **Languages**: Java, C++, Python
- **Technologies**: Spring Boot, Spring MVC, RESTful APIs, Maven, Gradle, MongoDB, AWS, Redis, Git, Kubernetes, Jenkins, Datadog, Jmeter
- **Others**: Cloud Engineering, OOP, Data Structure, Algorithm

EDUCATION

- **Indian Institute of Technology, Kharagpur**   CGPA: 9.16/10
  M.Tech in Instrumentation and Signal Processing   *Sep 2020 – May 2022*
  (Project in Image Processing using Federated Deep Learning)

- **Jadavpur University, Kolkata**   CGPA: 9.15/10
  B.E. in Electrical Engineering   *Jul 2016 – Aug 2020*

PROJECTS

- ***Model Verifiability in Federated Learning (M.Tech Project)***:   Github
  - Standard federated averaging algorithm struggles with malicious clients; hence formulated and implemented a **stochastic federated averaging** algorithm to detect and mitigate their impact.
  - **Technologies**: Python, PyTorch, Deep Learning.

- ***Discussion Forum***:   Github, Render.com
  - Developed DoConnect, a question-answer forum website.
  - **Frontend technologies**: React.js, JavaScript, CSS, Bootstrap; **backend technologies**: JavaScript, Node.js, Express.js; **database**: MongoDB; **chat feature**: Socket.io.

- ***Pizza Store***:   Github, Render.com
  - Developed a pizza store website using React.js, JavaScript, CSS and Bootstrap.
  - Used a JSON server for data storage and mock APIs.

- ***Chat Application***:   Github
  - Developed a real-time chat application with React.js, JavaScript, and CSS for frontend.
  - Used Javascript, Node.js and Express.js for backend and Socket.io for chat feature.