

# Kingshuk Sadhu

 [kingshuk-sadhu.tech](https://kingshuk-sadhu.tech)

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## EXPERIENCE

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### • 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 enable 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 (~ 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

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- 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

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### • 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

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### • *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; **dataset:** DRIVE(Digital Retinal Images for Vessel Extraction).

### • *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.