





# Kshitiz Agrawal

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## EDUCATION

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### Vellore Institute of Technology, Bhopal

B.Tech in Computer Science Engineering & Specialisation in AI & ML; CGPA: 8.5

Bhopal, India

Aug '20 - Jul '24

## EXPERIENCE

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### FinBox Backend Engineer

Jan'24 - Present (Full Time), Oct '23 - Dec'23 (Intern) | Bengaluru, IN

- Building an internal HTTP proxy (**Octopus**) with custom DSL with support for encryption, authentication, flows, webhooks all driven just by DSL.
- Maintainer of a library **DataDancer** - a config driven JSON transformation engine in Go with support for custom functions aka layers.
- Owned and developed a resilient **webhook delivery service** from scratch with configurable retry mechanism and dead letter queues.
- Building config driven durable and fault tolerant business workflows with **Serverless Workflow Specification** using **Temporal**
- Building an **orchestrator** which parses the Serverless Workflow config and executes temporal workflows.
- Pioneered the system **Vendor Switch** - an **intelligent runtime switch** for scale, responsible for identifying the best performing vendor for a certain service by aggregating multiple performance metrics.
- Built a tiny AWS Lambda (**Cyphr**) in Golang to support custom code execution using **Go Plugins**
- Owned and developed a **front-end dashboard** from scratch for Octopus called **OctoDash** for managing and onboarding services.
- Maintainer of **Serverless Workflow Editor** at FinBox
- Open source contributor at **Serverless Workflow Go SDK**

## PROJECTS

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### Online Code Playground with Realtime Collaboration

May - Jun '22

- \* Created a full-stack application which allows users to **write and run code directly in their browsers**
- \* Allows seamless **collaboration** with peers in **real-time** across 4 languages (**NodeJS, Python, C++, Java**)
- \* Uses the **Docker Engine API** to build **containers on-demand** to allow code compilation in an **isolated** environment
- \* Supports conflict free editing using **CRDT** algorithm with auto-completion using **language server protocols (LSP)**
- \* **Tech Stack:** Typescript, Nodejs, MySQL, Docker, Reactjs, WebSocket, Redis, Monaco, YJS

*Links:* LIVE: [ide.kshitizagrwal.in](https://ide.kshitizagrwal.in) REPOSITORY: [github.com/Kshitiz1403/Collaborative-IDE](https://github.com/Kshitiz1403/Collaborative-IDE)

### Eco Walk organizer with TOTP based encryption

Nov - Dec '22

- \* Developed **app** and **hardware** inspiring litter collection during walks for a cleaner environment
- \* App guides users to nearest smart trash bins along their way, suggesting optimal paths for disposal
- \* Developed a hardware using inbuilt **sensors** and **displays**, operated by an **arduino**
- \* Utilized **TOTP key generation** to encrypt a **JWT token**, renewed every **30 seconds** enabling offline use
- \* **Tech Stack:** Nodejs, React Native, Embedded C, Redux, MongoDB, Redis, Google Direction API

*Links:* DEMO: [youtu.be/HUsWpg-VFks?t=745](https://youtu.be/HUsWpg-VFks?t=745) REPOSITORY: [github.com/Kshitiz1403/Sudarshan](https://github.com/Kshitiz1403/Sudarshan)

## TECHNICAL SKILLS AND INTERESTS

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**Languages:** GoLang, TypeScript, Javascript, Java, Python, C++

**Developer Tools:** Kubernetes, Docker, Temporal, Kafka, Nginx

**Technologies:** NodeJS, ReactJS, React Native, GraphQL, Redux, WebSocket

**Cloud/Databases:** PostgreSQL, MySQL, MongoDB, Redis, AWS, Azure, GCP, Oracle Cloud

**Areas of Interest:** Distributed Computing, Database Internals and Computer Science Internals

## ACHIEVEMENTS

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### Guest Speaker at College Fest

Feb '23

Delivered an impactful web-dev roadmap talk to 400+ attendees in a flagship event

### GDSC Club

May '22

Judged HackDSC web projects, assessing 100+ participants

### Competitive Programming

Jan '22

266/10534 (Top 2%) Scaler Academy Contest