

# Sonali Mandal

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## SUMMARY

A software engineer having more than two years of extensive experience in developing mobile applications. Meticulously developed user interfaces and state-of-the-art features in the iOS platform. Adept at critical thinking, troubleshooting, and effective collaboration.

## SKILLS

- Excellent understanding of Object Oriented Programming
- Proficient in Swift and Python
- Strong knowledge of MVVM, Git, Xcode, UI Unit testing
- Experience on web services API integration (REST, GraphQL, JSON)
- Familiar with iOS SDK (UIKit, Cocoa Touch, Core Data)
- Aware of Swift Lint, code Ownership, build release

## WORK EXPERIENCE

**OCT 2019 – PRESENT**

Software Engineer-I  
*Johnson Controls, Inc.*

After undergoing a rigorous training program, I started migrating existing features and developed multiple new features in the OpenBlue Companion app of JCI. OpenBlue Companion is an occupant management application to enable a smart Building Management System (BMS). By interacting with the app, occupants can manage meeting bookings, hot-desking and check-in of spaces, report emergencies, read announcements, track individual's daily status.

## PROJECTS

### LOCKER MANAGEMENT

Using this feature, a locker in a particular floor can be booked by scanning a QR code. Various security constraints are managed in the app for seamlessly providing ad-hoc access.

### SCHEDULING ASSISTANT

Developed a meeting scheduling assistant that allows booking free time slots and meeting room, considering the availability of attendees and infrastructure. The meeting slot can be easily adjusted by dragging/tapping on the interface.

### VISITOR MANAGEMENT

Implemented a visitor management feature from scratch that allows external visitors to book a visit to an office, including parking space reservation and passcode-based authentication. The app also collects the visitor's details and shows navigation on an indoor map to the visiting location.

### LOCATE A COLLEAGUE

Fully implemented a feature for employees to locate their colleagues that shows their desk location details, including an option to redirect to a map for navigation. The user can either select from a list of team members or search in the entire organization database.

### DARK & LIGHT THEMES

Used Swift Theme library to customize reusable light and dark themes for multiple features of the Open Blue Companion app, such as User Profile, Support, App Feedback, Floor-Map, Calendar, etc.

### RESERVE A SPACE

This feature allows booking a meeting room and other relevant office resources. It has a complex UI for inputting various details, selecting the space from a map based on the input, and selecting the required resources, with many interleaved API calls. There are options to repeat, cancel, edit the booking and extend after checking in. Tenant-specific constraints are imposed during the reservation.

### SOCIAL DISTANCING SCORE

Particularly useful in post-pandemic, it shows the social distancing score of an employee in a circular chart, including star ratings of individual components of the score. The team's average score with the weekly bar graph is also rendered.

### FEATURE ENHANCEMENTS

Developed these feature enhancements on the Open-Blue Companion app-

1. Changed the legacy API to GraphQL and enhanced the corresponding UI components.
2. Tray notifications on social distancing violation.
3. Safety supplies ordering in a help-desk feature.
4. Various enhancements to an emergency service.

## M.TECH THESIS

Proposed a novel approach to secure a Cassandra database for storing medical data in an untrusted cloud ecosystem. Specifically, it stores patient's information in encrypted form and provides seamless access to permitted users while limiting the access for unauthorized users and attackers. It also prevents unauthorized data modification using a secure hash-chain. Access to the hash-chain is provided with a secure protocol.

## EDUCATION

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- 2019 **Distributed and Mobile Computing**  
MASTER OF TECHNOLOGY  
*Jadavpur University, Kolkata*
- 2015 **Computer Science & Engineering**  
BACHELOR OF TECHNOLOGY  
*Maulana Abul Kalam Azad University of  
Technology, Kolkata*

## APPS ON APPSTORE

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- [OpenBlue Companion \(iOS\)](#)
- [RBC Workplace](#)

## AWARDS

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- Pat on the back award in September FY20 for on time delivery of RTW solution.
- Pat on the back award in March FY21 for Visitor Management feature delivered.
- Pat on the back award in July FY21 for Scheduling Assistant feature delivered in a strict deadline.