

Sandeepan Bhattacharyya

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ABOUT ME

Seasoned software engineer excelling in modern tech, specializing in scalable system design. Passionate about innovation, I stay ahead with emerging technologies. Committed to cultivating work-life balance and contributing to professional environments that value innovation and collaborative excellence.

INDUSTRIAL EXPERIENCE

Twilio

Software Engineer (L2)

Bengaluru, India

Dec 2021 to present

Tech Stack: Ruby, Golang, JavaScript, TypeScript, React, MongoDB, Docker, Jenkins, AWS, Kibana, Datadog, Kafka, Buildkite

- Worked on legacy Authy B2B services, improving backend code and internal tools.
- Spearheaded the redesign, restructuring, and deployment of all customer-facing Authy Service web pages in accordance with our new Twilio Paste design library, significantly enhancing the user experience for our customers.
- Transitioned to a dynamic Growth team based in India, where our focus is on driving profitability through innovative strategies. Our mission involves mitigating fraud risks, optimizing product efficiency, and fostering sustainability by leveraging machine learning insights to achieve cost savings. In this role, I spearheaded the design and development of a cutting-edge microservice. This tool empowers customers to assess the risk associated with phone numbers, ultimately safeguarding their business revenue. Currently serving SMS Pumping Risk via Twilio Lookup for customers, and helping our product offerings (Messaging, Verify etc.) save cost on delivering messages.
- I collaborate as a guest engineer with various product teams to enhance customer-facing web pages. Together, we effectively communicate the cost savings insights resulting from our Growth team's optimization efforts, empowering customers to make informed decisions.

Filed (Abstract Inc.)

Software Developer

London, UK (Remote)

Mar 2021 to Dec 2021

Tech Stack: Linux, Python, Flask, FastAPI, JavaScript, TypeScript, NodeJS, Express, SocketIO, MongoDB, PostgreSQL, MS SQL Server, RabbitMQ, Docker, Jenkins, AWS, Rancher

- Isolated modular functionalities as scalable AWS Lambda functions using **python and nodeJS**, built multiple localized docker environments for backend services and defined serverless testing methodology for the team.
- Defined new microservice deployment process using **FastAPI**. Refactored existing microservices and gained $\approx 30\%$ speed. Re-modeled the deployment pipeline in **Jenkins** to support multiple frameworks later on.
- Designed **FastAPI based asynchronous messaging microservice** for real time communication between our users, via **websockets**; **tested on $\approx 10K$ live connections** on stage, and moved to production without bugs.
- Maintaining service github repository; enforced templates and actions to maintain code quality and code coverage ($\approx 70\%$). Collaborated with teammates to adapt behavior driven development (**BDD**) practices, increasing resiliency.

Arogya MedTech Private Limited

R&D Engineer (S/W) 1

Kolkata, India

Jr. S/W Developer

Dec 2019 to Dec 2020

Mar 2019 to Nov 2019

Tech Stack: Linux, Python, C++, Flask, JavaScript, TypeScript, NodeJS, Express, React, Redux, Saas, Matlab, MongoDB, PostgreSQL, Redis, Docker, Firebase, AWS, OpenBCI

- Developed an interactive Python desktop app for Project CEREBROS (Patent **WO2017179073A1**), a Brain Computing Interfacing (BCI) system designed to assist medical professionals in detecting health conditions from EEG and NIRS signals, with pertinent markers. Implemented **EDF/EDF+** standard to store bio-signal data, and contributed to open-source **BIDS/pyedf** library.
- Developed a high-fidelity nRT 24-bit bio-signal data plotting mechanism using Python, ensuring zero data loss. Additionally, I created algorithms to address raw streaming and unequal frequency sync issues for multiple LSL signal streams, enhancing the application's reliability and performance.
- I built a React-based Interactive Dashboard to play and analyze recorded EEG Streams from a remote Firestore Database. It incorporates an API for lightweight real-time data streaming, and playing back saved data from EDF files in the cloud.
- Collaborated with IIT Gandhinagar research lab on Eye Tracking technology against Project MindEye (Patent **WO2016092563A3**).
- Coordinated technical oversight in Clinical Trials for CEREBROS and MindEye in medical facilities and research cohorts.
- Created automation scripts for data processing tasks for MindEye trial dataset and completed a 30-day manual workload (*processing time per set was about 9 hours*) within 19 days ($\approx 36.66\%$ time cost reduction). Analyzed the processed dataset in **Matlab** and generated eye saccade insights. The findings are summarized in **Dementia 2020**, DOI:10.13140/RG.2.2.29761.92000.

EDUCATION

- B.Sc. in Computer Science, West Bengal State University, 2018