SOHAM BISWAS

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EDUCATION

- Bachelor's in **Computer Science and Engineering** | *Institute of Engineering and Management, Kolkata* | CGPA: 9.33 | **July 2022.**

TECHNICAL SKILLS

- **Programming Languages:** Python, C/C++, Golang, CTRL, Bash.
- **SCADA System:** WinCC OA (SIMATIC WinCC Open Architecture).
- **Databases:** MySQL, PostgreSQL.
- **Tools:** Git, Gitlab-CI, JIRA, Docker, Raspberry Pi, RabbitMQ.

EXPERIENCE

CERN (Conseil Européen pour la Recherche Nucléaire) **Geneva, Switzerland**
Software Engineer *Mar 2023 to Present*

- I play a pivotal role in developing and maintaining the Alarms and Events screen, a critical component of CERN's accelerator control system. I carefully consider the system's performance requirements and incorporate valuable physicist/operator feedback to ensure an optimal user Interface and Experience.
- Leveraging my expertise in software engineering, I skillfully utilize the **WinCC OA** SCADA system framework to establish seamless interaction between the Alarms and Events screen and the Controls system. To accomplish this, I employ the **Qt** framework to create visually appealing graphical user interface elements while harnessing the power of **C++** to facilitate the high-speed processing of enormous amounts of data.
- Throughout the development process, I meticulously adhered to industry best practices, employing efficient coding methodologies and ensuring the stability and robustness of the screen and enhanced monitoring and control experience for the accelerator control system at CERN.
- Technologies used: **C++, Qt, WinCC OA, Ctrl, Python, SCADA**.

Stealth Startup **Remote, India**
Software Engineer *Oct 2022 to Feb 2023*

- As a Golang Developer, I spearheaded a transformative project focused on implementing a highly efficient backend API service. My role entailed handling complex blockchain transactions while prioritizing distributed computing practices to achieve optimal performance. The seamless flow of data from the user interface to the backend and back was carefully orchestrated, ensuring a smooth and responsive user experience. **RabbitMQ** and **PostgreSQL** were utilized to implement message queues and database operations respectively.
- Technologies used: **Golang, RabbitMQ, Docker, Fiber, PostgreSQL, Viper.**

CERN (Conseil Européen pour la Recherche Nucléaire) **Geneva, Switzerland**
Software Engineer (Internship) *Mar 2021 to April 2022*

- As a Software Engineer intern at CERN, I was entrusted with the development of a sophisticated graphical application tool designed to enhance equipment development, testing, and diagnostics across CERN's extensive accelerator complex. Leveraging my expertise in **Python** and the **Qt** framework, I successfully spearheaded the creation of crucial components that formed the foundation of the application.
- Central to the application's success was the implementation of feature-rich plotting widgets with bi-directional data binding. This functionality allowed for seamless and dynamic visualization of data, enabling physicists and operators to gain valuable insights and make informed decisions in their work.
- In order to ensure the application's robustness and usability, I diligently tackled the challenge of maintaining exceptional UI responsiveness, even under high data volumes and rates. By optimizing data processing algorithms and employing efficient threading techniques, I achieved a smooth user experience even when dealing with large amounts of data. The application effectively presented complex functionalities in a simple and accessible manner, empowering users to navigate their tasks with ease and efficiency.
- Technologies used: **Python, PyQt, pyqtgraph, pytest-qt, Numpy.**

Google Summer of Code 2020 - Python Software Foundation **Remote, India**
Student Developer (Open Source Program - Internship) *Mar 2020 to Sept 2020*

- As a python developer, I worked on an open source **Python** graphics library FURY where I developed optimized Virtual Reality ready 2D and 3D graphical user interfaces from scratch via graphics primitives and provided physics engine integration with **pyBullet**. More information regarding my weekly progress can be found at the official Python Software Foundation blogs. My work benefited the organisation with additional UI components and a fully documented physics engine integration.
- Technologies used: **Python, PyBullet, Numpy, VTK.** | Project Link | Final Work Report

OPEN SOURCE, VOLUNTEERING AND PUBLICATIONS

- **Open Source Contributions:** GSoC'21 Mentor, Fury, AnitaBorg, CodersRank, thecodefoundation, linux-kernel, Appwrite.
- **Publication:** The Journal of Open Source Software | **DOI:** 10.21105/joss.03384 | Publication Link
- **Language skills: English(C2)**, Hindi(C2), Bengali(Native), French(A1).
- Received Gold Medal Award for best student performance and impactful contribution to Open Source and Open Science.