

# Brahmajit Das

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## Work Experience

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### • Firmware Developer

*Firmware Developer*

**Mumbai, Maharashtra**

*September 2021 — Present*

- Develop firmware for custom hardware.

### • Sironaaz Lab

*Embedded Systems Engineer, Intern*

**Calcutta, West Bengal**

*August — September, 2021*

- Ported existing system to different processor architecture.
- Refactor existing code and implement better communication protocol (SPI and I2C).
- Integrate UI with hardware.

## Education

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### • Gurudas College

*B.Sc. with Honors – Computer Science; CGPA: 7.493*

**Kolkata, India**

*2018 – 2021*

*Courses: Operating Systems, Data Structures, Algorithms Design and Analysis, Databases, Networking, Machine Learning*

## Core Technical Skills

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- **Programming Languages:** C, C++, Java,  $\LaTeX$ , Python, shell scripting, SQL
- **Tools:** Git, Docker, ssh, PlatformIO, FreeRTOS
- **Platforms:** Linux, BSDs, Windows, RaspberryPi
- **$\mu$ -Processors:** ARM STM32, Atmega328p, ESP32

## Personal Projects

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- **Interfacing with sonar module using Atmega328p:** Using *AVR C* and **Atmega328p** to interface with **HC-SR04** (sonar module). **UART** was used as the communication protocol. [Link to project](#).
- **FreeRTOS on ARM STM32F103:** Ported the FreeRTOS to ARM STM32F103C8T6 (Cortex M3), known as **Bluepill**. Then used to generate a PWM with Timer 2 as test case. [Link to project](#)
- **My Compiler Writing Journey:** Writing a C compiler from scratch, using the **acwj** as the base starting point. [Link to project](#).
- **Brain Tumor Detection:** Using image classification algorithms (**CNN**, **VGG 16** and **ResNet 50**) to predict the presence of tumorous cells. Achieved up to **98%** accuracy. (*Project paper*)

## Open Source Contributions

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- **Gitlab Shell** Changed the default logging format to **JSON** from plain text, was part of the **14.1 release**. GitLab Shell handles **git SSH sessions for GitLab** and modifies the list of authorized keys. [Merge Request 467](#).
- **DevOps Guide** Contributed to **several chapters** of this popular DevOps guide (**3.8k stars**), including chapters for Virtual Machines, Linux commands and tools for DevOps and Firewall. [Link to all my contributions](#).

## Achievements

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- **HacktoberFest 2020:** Among 70,000 participants, awarded goodies and cash prize.
- **College Seminar:** First position in college seminar. Using Arduino and HC SR04 module, created a sonar with GUI feedback.