

# Brahmajit Das

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## Education

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- **Gurudas College**

B.Sc. with Honors – Computer Science; last SGPA: 9.01

Kolkata, India

2018 – 2021 Exp.

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

## Skills Summary

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**Programming Languages:** C, C++, Python, JAVA, Bash, SQL, PHP

**Tools:** Git, Docker, MySQL, SSH, PlatformIO,  $\text{\LaTeX}$ , FreeRTOS

**Frameworks:** OpenCV, Tensorflow, Keras, NumPy

**Platforms:** Linux, BSDs, Windows, Arduino, STM32 Cube, Google Colaboratory

**Micro Processors:** Atmega328p, ARM STM32 (Cortex M3)

## 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*)

- **Python Path Visualizer:** A *path visualizer* program written in **Pygame**. User can set start-end point and obstacle. **BFS** and **DFS** was used as the algorithms of choice. [Link to project](#).

## 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](#).

- **Gitlab Runner** Updated test case names for `TestBuildJobStatusEnvVars`. GitLab Runner is the open source project that is used to run CI/CD jobs and send the results back to GitLab. [Merge Request 2907](#)

- **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:** Was among 70,000 participants. Was awarded goodies and cash prize.

- **College Seminar:** First position in college seminar. Using Arduino and HC SR04 module, created a sonar with GUI feedback.