SIDDHARTH PRAVEEN BHARADWAJ

EDUCATION

12th Grade | *2025*
Kendriya Vidyalaya IISc Bengaluru (CBSE)
Stream: Physics, Chemistry, Mathematics, Computer Science

CONTACT

siddharthpb2007@gmail.com
819 720 0817
github.com/Sid110307
linkedin.com/in/sid110307
sid110307.github.io/Sid110307

PROFILE

Interest in programming, AI/ML, graphics, application and embedded development, and low-level systems. Looking to gain practical experience by contributing to real-world software and research projects.

SKILLS

- **Programming Languages:** Python, C, C++, C#, Java, Kotlin, JavaScript, TypeScript, Bash, x86 Assembly (basic), JSON, YAML, Markdown
- **Frontend & UI Development:** HTML/CSS, React, React Native, Node.js, Expo, Android SDK, Vue (basic), Angular (basic), ImGui, SDL2
- **Backend Frameworks & Databases:** Express, Flask (basic), Apollo GraphQL, Prisma, Supabase, Firebase (basic), PostgreSQL, MySQL, SQLite
- **DevOps & CI/CD:** GitHub Actions, Google Cloud Platform (GCP), EAS (Expo), Docker (basic), systemd, cron (basic)
- **Tools:** Git, GitHub, VS Code, JetBrains IDEs, Vim, Visual Studio, CLI tools, CMake, Make, Postman, Figma, FreeCAD, Blender, GraphViz, Linear, Trello
- **Graphics & Game Development:** OpenGL, Framebuffer, Raycasting, Unity (basic), Ursina Engine (basic)
- **AI/ML and Data Science:** NumPy, Pandas, Matplotlib, OpenCV, TensorFlow Lite (basic), OpenAI API
- **OS Development & Low-level Systems:** UEFI, Bootloaders, Memory management, Syscalls, Threading, GPIO
- **Platforms & Embedded Systems:** Linux (Debian-based), Windows, macOS, Android, iOS (basic), Raspberry Pi, Arduino, ESP32/ESP8266
- **APIs & Protocols:** REST, GraphQL, HTTP/S, WebSockets, TCP/UDP, BLE, UART
- **Cybersecurity:** Burp Suite, Wireshark (basic), Nmap (basic), Request interception
- **Language Internals & Tooling Concepts:** Language design, Interpreters, Tokenization, Bytecode emulation
- **Soft Skills:** Communication, Teamwork & Collaboration, Problem Solving, Project Management, Time Management, Client Interaction, Critical Thinking, Empathy, Continuous Learning, Adaptability

EXPERIENCE

Chief Technology Officer

HustleX (XElite Studios Pvt. Ltd.)
Mar 2022 - Present

- Led backend and frontend development across multiple products with full-stack integration.
- Designed apps using React Native with Node.js and PostgreSQL backend and implemented CI/CD.

- Built real-time systems using WebSockets and REST APIs.

Research Intern

Interdisciplinary Centre for Energy Research (ICER), Indian Institute of Science

Apr 2023 - Oct 2024

- Designed CAD models for microfluidic sensors used for sensing particular substances.
- Developed a real-time photovoltaic (PV) dashboard with data logging, live analytics, and interactive graphs.
- Implemented full-stack architecture using React, Next.js, MySQL, and visualization libraries for monitoring data.

PROJECTS

Ankura - *A community-powered sapling rescue platform*

- Developed a mobile app using React Native with offline support via SQLite (local) and Supabase-based (cloud) sync. Designed a local queue system to handle unreliable connectivity.
- Structured a secure entry workflow with multiple sapling statuses, user input, editable metadata, and image handling.
- Automated region tagging using Google Geocoding API (village, district, etc.).
- Created a separate web admin frontend for reviewing, moderating, and managing entries, with tools for verification and region-based filtering.

TreeMap - *A geospatial tree mapping tool for environmental research*

- Developed a mobile app built using React Native and Supabase to log, cluster, and map trees with geolocation and metadata.
- Integrated on-device AI for species prediction and offline support for field use.
- Built support for region-based packs (GBIF-based dataset) to customize species detection.
- Enabled cloud sync and duplicate detection based on GPS proximity and timestamps.

PVDashboard - *A real-time photovoltaic data monitoring dashboard*

- Developed a full-stack web app using React, Next.js, and MySQL to monitor and analyze PV data fetched from solar panels.
- Implemented real-time data logging, live analytics, and interactive graphs for data visualization.
- Utilized libraries like Plotly.js for data visualization and analysis.

ShadowDoom - *A fantasy console game in Python*

URL: github.com/Sid110307/ShadowDoom

- Created a fantasy console game using Python, pygame, rich, and tkinter for graphics and UI.
- Implemented a custom scripting language for game logic and event handling.
- Developed shop, inventory, weapon stats, random event generation, and battle mechanics.

WeatherFinder - *A simple weather report website*

URL: github.com/Sid110307/WeatherFinder

- Designed a weather report website using React.
- Created a user-friendly interface with interactive elements and animations.
- Utilized the WeatherAPI to fetch real-time weather data and display it in an organized manner.

Attendifier - *An attendance management app*

- Developed a face recognition-based attendance management system using Python, OpenCV, and Firebase.
- Utilized libraries like dlib for face detection and a CNN-based model for face recognition with modifications to improve accuracy.
- Stored attendance data in Firebase for easy management.

AxiLang - *A scripting language for controlling the AxiDraw plotter*

URL: github.com/Sid110307/AxiLang

- Designed a custom scripting language to access the EggBot API and control the AxiDraw plotter.
- Implemented a parser and interpreter using C++ and Python.
- Added extra functionality like drawing images from URLs and manual pen control.

BLEConnector - *A Bluetooth Low Energy connector/scanner for Android*

URL: github.com/Sid110307/BLEConnector

- Developed a Bluetooth Low Energy (BLE) connector/scanner app for Android using Kotlin.
- Implemented an interface to scan for nearby BLE devices and connect to them, along with manual connection options.
- Utilized the Android BLE API to scan, connect, and communicate with BLE devices.

quarklang-vm - *A virtual machine for a custom stack-based, assembly-like language*

URL: github.com/Sid110307/quarklang-vm

- Developed a virtual machine for a custom stack-based language.
- Implemented a parser and interpreter using C.
- Designed a custom assembly-like language with features like loops, conditionals, function calls, etc.
- Created a custom bytecode format.
- Implemented a custom step-debugger, disassembler, and a REPL for testing and debugging.
- Created syntax plugins for editors like VS Code, Vim, and Emacs.

FBGraphics - *A C++ graphics engine that renders by directly manipulating pixels in a framebuffer*

URL: github.com/Sid110307/FBGraphics

- Developed a C++ graphics engine that renders by directly manipulating pixels in a framebuffer.
- Implemented basic 2D rendering techniques, like shape primitives, lines, and polygons.

TestOS - *A simple operating system*

URL: github.com/Sid110307/TestOS

- Worked on a simple operating system using C++, x86 assembly, and C.
- Implemented basic features like memory management, paging, and interrupts.
- Used GNU EFI for UEFI development.
- Added support for basic screen printing with colors, keyboard input, and mouse cursor support.

Earther - *An Android data logger for earthing voltages*

- Developed a data logger app for earthing voltages along with geolocation data using Kotlin.
- Added input of timestamp, earthing voltage, and geolocation data.
- Implemented a CSV export feature for data logging.
- Added screens for data visualization and analysis with table and chart views.

LMS – *A Lab Management System*

- Developed an Android Lab Management System using Kotlin and Firebase.
- Implemented features like purchase and equipment management, notice board, and simple user authentication.
- Utilized Firebase for real-time data storage and synchronization.