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| **SAYAN SAHA**  **Embedded Systems Engineer**  **Phone:** 0745457087  **Email:**[sayan20899saha@gmail.com](mailto:sayan20899saha@gmail.com) **Address:** Nantes, 44300 **LinkedIn:**  [www.linkedin.com/in/sahasayan20](http://www.linkedin.com/in/sahasayan20) |
| **Technical Skills:** |
| **Embedded System Skills:**Embedded C, C++,Python, Java, VHDL, LINUX, **GIT**, **FreeRTOS**, MATLAB, SoC, **Signal Processing**  **Hardware Platforms:** TIMsp430, RaspberryPi5, Arduino, FPGA, STM32F407-ARM Cortex M4  **Communication Protocols:**  UART, CAN, I2C, SPI, USART,  BLE, Ethernet, USB, Wi-Fi, NB-IoT, LoRaWAN, Sigfox, TCP/IP |
| **Interpersonal Skills:** Teamwork, Communication, Leadership **Languages:**  English: Professional French: Basic **Hobbies:**  Cooking  **Interest:**  Spacecrafts, AI, Robotics  **Academic Projects:**  **Path Detection Vehicle**:   1. Utilized Msp430 for robot development. 2. Code Composer Studio was used for firmware debugging. 3. IR Sensor used for object detection.   **Star Sensor:**   * 1. Alternative of GPS for navigation.   2. Developed Mathematical model and tracking algorithm.   3. Tested the algorithm using Raspberry Pi5.   4. Electronic Card Designed usind. |

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| **Profile:**  Embedded Systems Engineer with a strong academic background and hands-on experience in firmware development and driver integration on RTOS-based systems. Proficient in C and C++ for embedded platforms with a deep understanding of microcontroller architecture and hardware peripherals. Experienced in Linux Platform/RTOS, focusing on firmware debugging and utilizing IoT Technologies.  Adept at ensuring system performance, reliability, and security. Seeking an Opportunity for CDI from October 2024 onwards.  **Education:**   * **ESIGELEC |Rouen |France –: Sep/2022- Sep/2024**   Master In Sciences & Technology–Electronic Embedded Systems   * **University Of Petroleum & Energy Studies (UPES)|Dehradun | India-: Aug/2018 – Jul/2022** Bachelor Of Technology–Mechanical Engineering |
| **Professional Experience:** |
| **Embedded Software Developer| Internship| IUT de Nantes | Feb/2024 -Aug/2024** |
| * **Developed software** for the simulation of **Cyber-Physical Production Systems** using **IoT (Wi-Fi)** and **Multi-Agent Systems**. * **Resolved Manufacturing Scheduling** Problems in **Flexible Manufacturing System** using **mathematical modeling** and **Multi-Agent Systems.** * **Raspberry Pi 5** used as **Hardware** for **Agent Development.** * Designed **Software** followed a **distributed architecture.** * **Designed software architecture** using **UML** and **state diagrams**. * **Integrated software** on **Raspberry Pi 5** and **Arduino** under real-time constraints on a **Linux platform**. * **IoT (Wi-Fi)** was utilized to communicate between **Agents**, to assign jobs and tasks. **Meta Heuristics** and **Reinforcement Learning** was used to make **job scheduling easy**. * **Integrated device drivers** and performed **firmware debugging** using   **multi-threading techniques**. **Software Frontend and Backend** is **developed** using **Python**.   * **Optimized system performance** reducing **latency by 30%** through efficient resource management and real-time adjustments. * Ensured **system security** by implementing **AES encryption** for **data transmission**, reducing vulnerability by 40%. |
| **Embedded System Engineer| Apprenticeship |UPES | Jul/2021 – Jun/2022** |
| * **Developed software** to simulate the behavior and operation of **Autonomous Underwater Vehicle** integrating **IoT technologies (LoRaWAN)** for **real-time data collection** and **remote monitoring**. * **Designed system architecture** using **UML** and **state diagrams**. * Used **C++** on **Linux platform** to create **software simulation environment**. * Programmed the **STM32F407-ARM Cortex M4** and **Sensors** with * **Embedded C**, emphasizing **multi-threading** and **real-time constraints**. * **MATLAB** was used for **signal processing** and **testing sensors** like **motion sensor, sonar, gyroscope, pressure sensor, thermal sensor**. * **Designed** the **Vehicle** using **CATIA V6** and **built** the **Thermal Simulation** and **Structural Analysis Simulation** of the **vehicle**. * Enhanced **system security** by implementing **AES encryption**, improving   **data integrity** and confidentiality. |
| **R&D Engineer| Apprenticeship| UPES| Mar/2020 – Jun/2021** |
| * Developed an **Alcohol Detection Sensor** for the **automotive sector**. * Utilized **KiCAD** for **Sensor Electronic Card design**. * Used **MATLAB** for **signal processing** and **improving sensor accuracy**. * Utilized **STM32F407-ARM Cortex M4 to control the sensor**. * Programmed the **STM32F407-ARM Cortex M4** and **Sensor** with **Embedded C**, in **IAR workbench** emphasizing **multi-threading** and **real- time constraints**. * **Designed** the **system** to **enter low power modes** when inactive. * Implemented **security protocols**, reducing system vulnerabilities by 35%. * **Collaborated** with a **team of 5 engineers** to design and **deploy** a **real- time monitoring system**, improving response times by 25%. |