E-Mail: *saikotavi@gmail.com*
Date of Birth: 17.07.1997
Address: Brüderstraße 6, 59065, Hamm
Tel: +49 17657779133
LinkedIn: https://www.linkedin.com/in/saikot-das-joy-758a9b212/
Github: https://github.com/Saikot1997/Projects_Done_For_Learning

Saikot Das Joy

Skills

- **Programming Languages** — C, C++, Python, Bare-Metal Progamming
- **Operating System** — Windows, Linux
- **Real Time OS** — FreeRTOS
- **Interface & Protocols** —
  Basics: UART, I2C, SPI
  High Speed: Ethernet, USB
  Wireless: Bluetooth, Wifi
  ***Industrial*:** MQTT
- **FPGA Development** — VHDL
- **Network** — TCP / IP, UDP
- **SDLC Models** — Agile, V-Model
- **Version Control** — Git
- **Tools** —
  Matlab & Simulink, Eagle, Xilinx Vivado & Vitis, SolidWorks, ANSYS Sherlock, Microsoft Visual Studio Code
- **UML & SysML • Microcontrollers • Machine Learning & Deep Learning • MS Office**

Languages

English – C1 **German** – A2 (Learning)

Professional Experience

HELLA GmbH & Co. KGaA | **Internship & Thesis | Lippstadt** (Jul 2023 – Mar 2024)

- Simulation using **ANSYS Sherlock** software for the prediction of solder fatigue life of components caused by thermomechanical stress
- **Development** of a **mathematical model** for the prediction of solder fatigue life in Light Emitting Diodes (LEDs), considering the specific soldering geometry of electronic components
- Utilization of **Python** in **Jupyter Notebook** for the prediction of solder fatigue life using this mathematical model, with an error range of only -7.94% to +1.12% compared to real results
- Measurement of component cross-section data with a microscope and collection of I-V data in the electronics lab, with **datasets prepared** for failure analysis and **FMEA** (Failure Mode and Effects Analysis) of various electronic components

JHK International | IT Support Officer - Fulltime | Dhaka, Bangladesh (Sep 2017 – Aug 2019)

- Assistance to the IT Team with Python and JavaScript tasks

Education

M.Eng. in Embedded Systems Engineering | Fachhochschule Dortmund | Dortmund | (Sep 2024 - Running)

B.Eng. in Electronic Engineering | Hochschule Hamm-Lippstadt (HSHL) | Lippstadt (Sep 2019 - Mar 2024)

- **Bachelor Project Work:** Multiparameter Health Monitoring System
- **Bachelor Thesis:** Simulation of PCBA robustness in alignment with the pre-development project titled “Reliability Prediction”

B.Sc. in Physics **| Shahjalal University of Science & Technology | Sylhet, Bangladesh** (Jan 2017 – Aug 2019)

Further Training

Data Science & AI | Le Wagon | 400 hours Coding-Bootcamp | Munich, Germany (Apr 2023 – Jun 2023)

- **Training Flow: -** Python → Data Toolkit → Decision Science → Machine Learning → Deep Learning → Data Engineering

Certification | Udemy | Online

- The C++ Masterclass: From Fundamentals to Advanced
- Embedded Systems Bare-Metal Programming Ground Up™ (STM32)
- Advanced Embedded Systems Bare-Metal Programming Ground Up™
- Step By Step VHDL Programming for Xilinx FPGA & CPLD
- Embedded Systems with AVR ATMEGA32 Microcontroller
- Complete SolidWorks Beginners Course

Reference

- **Dr. Rimma Zhytnytska**
  Hella GmbH & Co. KGaA, Opto-Mechatronic Technology Expert, Lippstadt, Germany
  Email: *rimma.zhytnytska@forvia.com*

PROJECTS

Click here-> ***Explore my Data Science and AI-related projects and training completed at Le Wagon, Munich, Germany***

Multi Parameter Health Monitoring System (on FPGA) (Feb 2023 – Jun 2023) | Bachelor Project | HSHL

- Utilization of the **Microblaze** Processor in **Xilinx Vivado IP Design** for processing data from an **IR temperature sensor** and a **pulse oximetry sensor**, enabling the measurement of ear temperature, heart rate, and oxygen saturation levels via the **I2C** communication protocol
- Display of sensor data on an **OLEDrgb display** using the **SPI** communication protocol
- Transfer of the data to a remote server through the **TCP** network protocol, allowing real-time monitoring by doctors with graphical representations on the **web server**
- Connection of an **ESP32 microcontroller** to the **Microblaze processor** using **AT commands** to facilitate this process
- Development of the firmware in **Xilinx Vitis** using **C programming**

Cross Traffic Management System for Autonomous Vehicles (Oct 2022 – Jan 2023) | HSHL

- Aims to control traffic at road intersections without conventional signal lights for autonomous vehicles
- Modeling of the entire system using **SysML**
- Implementation of the system using an **ESP32 microcontroller** with **FreeRTOS** for **FIFO** management
- Connection of vehicles to the controller via the **TCP** networking protocol, with support for partial parallel intersection crossing

Automated Rescue Robot (Apr 2021 – Jul 2021) | Hochschule Hamm-Lippstadt (HSHL)

- The robot autonomously navigates to the rescue site, following the shortest travel path with minimal energy expenditure, avoiding obstacles, and returning to its initial position after the rescue operation
- Initial system development was conducted using **SysML**. The robot was designed in **SolidWorks** in a 3D printable format. **Algorithms named "Wavefront" and "AXIAL Look"** were developed in **C programming** for this purpose

Battle-Ship Game in C (Mar 2021 – Jul 2021) | Hochschule Hamm-Lippstadt (HSHL)

- Development of a console-based Battleship game using **C programming**.
- Features include options for two-player mode, playing against AI, and three different difficulty levels.
- Users can manually set up their ships at the beginning of the game. Upon hitting a target, players receive another chance to shoot, and vice versa. The player whose ships are destroyed first loses the game.

IoT Room Temperature Controller (Apr 2022 – Jul 2022) | Hochschule Hamm-Lippstadt (HSHL)

- Users can control their room temperature from anywhere using an **Android app**.
- The system utilizes the **MQTT protocol** and involves components such as a **Raspberry Pi, Arduino Rev Wifi Microcontroller**, and a **stepper motor**.

Smartphone Controlled Car Movement using Bluetooth (Apr 2022 – Jul 2022) | HSHL

- Implementation of steering control for a car via a smartphone app using **Bluetooth** connectivity.
- Utilization of components such as **Arduino Uno R3, HC-05 Bluetooth UART Module, L298N Motor Driver Module**, and an **Android app** with Bluetooth support.