

Saptarshi Nag

EMBEDDED SOFTWARE DEVELOPER

Noida, Sector 53, Uttar Pradesh, India

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Profile Summary

Embedded Software Developer with more than six years of electronics industry experience and an advanced knowledge of Embedded engineering discipline, processes and Agile tools for developing innovative solutions to ensure quality products, integrated system solutions or services to meet the technical specifications and business demands of the ever evolving challenges and ethics of the Embedded system's industry.

Work Experience

HCL Technologies

SENIOR CONSULTANT

Noida, India

April. 2022 - Present

- Provide support to multiple teams to help establishing sensor interface and with embedded device setup
- Software debugging and optimisation
- Supervised Interns
- Product Documentation , Testing and Validation

Micron

EMBEDDED ENGINEER - CONTRACT

Hyderabad, India

Aug. 2021 - April 2022

- Verification and Testing of Firmware
- Debugging the firmware using JTAG and TRACE32
- Writing Scripts for Automating tasks within the existing internal workflow to provide support to multiple teams

TALTECH - Tallinn University of Technology

Tallinn, Estonia

EARLY STAGE RESEARCHER

Jan. 2018 - Jun. 2020

Department : Centre for Biorobotics

Worked alongside a team of Environment monitoring and Robotics researchers at the department of "Center for Biorobotics", to investigate methodology for uncertainty detection in the data acquisition system,for hydrology monitoring application.

- Developed embedded software on Stm32 microcontroller developing board for research application and hydrology research.
- Served as a Teaching Assistant, taught undergraduate students, Robotics and Robotic operating system (ROS) Programming, developed course materials including presentation and scripts for class demonstration.

ARM Holdings

Noida, India

CIRCUIT LAYOUT DESIGN ENGINEER (MEMORY SYSTEMS)

Aug. 2015 - Oct. 2016

Semiconductor and software development company. Department : Artisan Embedded Memory IP

Designed Circuit layout for the various memory architecture.

- Involved in testing and checks for quality assurance and final verification of the layout designs.
- Developed deep understanding of ARM architecture and memory architectures.

Glitz India

Ghaziabad, India

CIRCUIT LAYOUT DESIGN ENGINEER (POWER SYSTEMS)

Jan. 2013 - Feb. 2014

Consumer electronics startup specializing in LED lighting applications. • Designed Printed Circuit Boards(PCB) of voltage regulator and DC-DC converter for lighting appliances. • Designed, Developed and verified various hardware for production stages, documenting the workflow to create Bill of Materials (BOM).

EFY Tech

New Delhi, India

INTERNSHIP

Dec. 2012 - Feb. 2013

- Consumer electronics startup specializing in LED lighting applications.
- Designed Printed Circuit Boards(PCB) of voltage regulator and DC-DC converter for lighting appliances.
- Designed, Developed and verified various hardware for production
- Stages, documenting the workflow to create Bill of Materials (BOM).

Skills

- Proficiency in Embedded C programming on ARM Cortex M3, M4 and M0 architecture and RTOS (FreeRTOS) to develop multitasking applications. Ability to write firmware to implement I2C, SPI , UART for Sensor interface and

also Build firmware for wireless communication Bluetooth Low Energy (BLE) and Zigbee protocol, for different use cases. With working experience in TI, STM32, PIC and NXP chips

• In depth knowledge of C and C++ in Linux Environment, with a good understanding of implementing Data Structures and algorithms(DSA) and Design patterns in both the languages.

• Scripting in Python and Perl in linux environment, With a deep understanding of exploiting python for data handling applications like data mining and cleaning for supervised learning (ML). With proficient in python libraries: Pandas, numpy , Scikitlearn, Matplotlib and Tensorflow.

• Hands on programming experience in Robotic operating System (ROS) for virtual robot and computer vision environment simulation. Using C++, Python programming with intermediate level knowledge of OpenCV library in both the programming languages

• Version control using GIT, Atlassian tools for project management, and an ability to write clean technical Documentation or presentation description of the product using Latex, PlantUML or MS office suite

Teaching Experience

Tallinn University of Technology

Tallinn, Estonia

TEACHING ASSISTANT

Fall Sem - 2019

- Fundamentals of Robotics and Robotic Operating System (ROS Kinetic)
- Programming in C++ and Python for simulation ROS Environment.
- Arduino Programming and Arduino-ROS interface.

Education

Kingston University

London, UK

M.Sc IN EMBEDDED SYSTEMS

Jan. 2017 - Feb. 2018

- Academic Exposure to Parallel programming with GPUs using CUDA. Implementing Multithreaded applications in OpenMP and OpenMPI library
- Academic Exposure to Robotics, Actuators, Sensor and Feedback loop for Control.
- Academic Exposure to 3D/2D Computer Graphics and Vision processing using MATLAB.

CDAC - Central Department of Advanced Computing

Noida, India

POST GRADUATE DIPLOMA IN EMBEDDED SYSTEMS AND VLSI

Aug. 2014 - Jan. 2015

- Academic Exposure to Embedded C and writing firmware to operate ARM7 and AVR microcontrollers.
- Academic Exposure in writing VHDL/Verilog Code to implement RTL for state machines and controllers for I2C and UART control

IETE - Institute of electronics and Telecommunication Engineers

New Delhi, India

GRADUATION IN ELECTRONICS AND TELECOMMUNICATION ENGINEERING

Mar. 2008 - Aug. 2013

- Academic Exposure to the world of Electronic Circuits and Devices.
- Academic Exposure to theory of Signal Processing and scripting in MATLAB

Certifications

2021	Development of Secure Embedded System Specialization , EIT Digital School	Coursera
2020	Developing Industrial Internet of things Specialization , University of Colorado	Coursera
2021	Introduction to Embedded Machine Learning , EDGE IMPULSE	Coursera
2020	Design Thinking for the Greater Good: Innovation in the Social Sector , University of Virginia	Coursera
2018	Architecting Smart IoT Devices , University of Colorado	Coursera
2017	Software Architecture for the Internet of Things , University of Colorado	Coursera

Publications

Underwater bioinspired sensing: New opportunities to improve environmental monitoring)

IEEE, Instrumentation

JEFFREY A TUHTAN, SAPTARSHI NAG, MAARJA KRUUSMAA

April 2020

- DOI: 10.1109/MIM.2020.9062685
- The Paper proposed various Bioinspired designs can lead to a new generation of devices to ensure that environmental monitoring networks remain accurate and reliable over a wide range of physical conditions.